THE
MEDICAL AND SURGICAL REPORTER

No. 1784. PHILADELPHIA, MAY 9, 1891. VOL. LXIV.—No. 19.

CLINICAL LECTURE.

LEG ULCER—SKIN GRAFTING—KELOID—LUPUS—DIFFERENTIAL DIAGNOSIS OF LUPUS AND EPITHELIOMA—SCROFULOUS ULCERATION OF THE CERVICAL GLANDS—TRAUMATIC INFECTION—ANTISEPTIC POULTICE.

BY ERNEST LAPLACE, M. D.,
PROFESSOR OF PATHOLGOY AND CLINICAL SURGERY, MEDICO-CHIRURGICAL COLLEGE, PHILADELPHIA; SURGEON TO THE PHILADELPHIA HOSPITAL.

LEG ULCER.

Gentlemen:—The first case that I bring before you to-day is one that was operated upon by me eighteen days ago, and affords an excellent example of the successful results obtainable by the modern surgical method followed in the treatment of these cases.

A leg ulcer is a necrosis of the epithelium and underlying tissues. The surrounding parts are indurated and inflamed, and the edges of the ulcer are hard and callous. Of itself, a leg ulcer will not heal, but continues to increasei n size, until it frequently reaches entirely around the limb.

The treatment to be followed is, therefore, to cover this denuded and ulcerated surface with new skin; but before attempting this, we must prepare the surface of the wound for its reception. So the first step is to scrape away the necrosed epithelium and remove the callous edges. This must be thoroughly done, and it matters not if the operator goes right down to the muscle, or at all events until healthy and living tissue is reached. Then leave the wound until healthy granulations have begun to form, and you have a surface ready for your skin graft. Even this preliminary operation should be conducted with strictest aseptic precautions.

SKIN GRAFTING.

Let us turn aside from this patient for a moment to review the question of skin grafting. The process is a comparatively new one in surgery, dating only a few years back; but when skin grafting was first successfully performed, it was thought that only minute grafts could be transplanted. Accordingly, it was then the practice to snip off a tiny piece of skin, no larger than a pin's head, and to cover the denuded parts with a number of these. Such little grafts would form islands of epithelium which gradually increased in size, and joined one another, until finally the whole surface was covered. It was argued, however, that if a small graft would take root and grow, a large one should do the same, all things being equal. The total immunity from suppuration afforded by modern aseptic surgery, has enabled us to prove that this is truly the case. We no longer transplant minute fragments of skin, but take strips, or pieces, large enough to cover the entire denuded surface at the outset. This is what has been done in the case before you.

Let us first examine the spot from whence I took the skin. You see that it is entirely healed, and covered with new epithelium, although a large amount was removed. A valuable lesson may be learned from this. In no case should we hesitate to take from a healthy surface all the epithelium we need, for if we proceed aseptically, new epithelium is rapidly formed, and the healing is perfect. You will notice that the new skin covering is redder than the surrounding skin; this is because, first, it is thinner, and second, because the blood vessels lie nearer the surface. Ultimately, however, this new skin will become thicker than that of the surrounding parts, owing to the friction and irritation caused by the clothing, and a similar process of epithelial thickening will take place as that which occurs on the hands of rowers, where friction primarily wears away the skin, but where finally additional epithelial cells are thrown off until the part becomes materially thickened. Eventually, this reddened skin, now tender and thin, will, therefore, become thick, and also of a

darker color than the surrounding parts.

We will now turn our attention to what eighteen days ago was a very ugly looking indolent ulcer. You see that its surface is entirely covered with exceedingly delicate epithelium, so thin indeed as to be transparent, enabling us to see the underlying granulations. The operation has been a success, and nothing further remains to be done than to keep the part protected with an antiseptic dressing, and to keep the man in bed until this new epithelium has become thick and strong.

Right here let me warn you against a needless fear, often experienced by the young surgeon in similar cases. When, a week after having made the graft, you remove the dressing, you will find a large slough of dead epithelium come away with it, and you will very naturally conclude that the graft has not taken and that your operation has been a failure. Not so, however, for below the dead epithelium you will see the thin and transparent membrane which we have here. This is easily explained. In grafting we can only expect epithelium that is alive and well nourished to grow upon the denuded surface. Let me remind you of the anatomy of the skin. The uppermost layer, the horny epithelium, is dead, and comes off in washing as dandruff; below this are epithelial cells also poorly nourished; below these are the papillæ with their blood vessels and surrounded by living epithelial cells; and, finally, below all these is the fibrous tissue. In taking our graft we cut through these papillæ. We know this because we have distinct hemorrhage. This living and well-nourished epithelium we graft on our denuded surface where it grows and new epithelial cells quickly form from around the papillæ and push up the layers of unnourished cells, so that when the dressing is removed it would seem as though the whole graft had come away, while in reality the living epithelium has taken root.

KELOID.

The next patient which I will call your attention to this morning, is also one that was operated upon about two weeks ago, and is another example of successful skin grafting.

A keloid is, as you know, a dense cicatricial formation, which causes considerable contraction. This man came to the hospital with a dense growth on the ball of the thumb, which contracted that member into the hand. The growth was primarily removed, and a week allowed for healthy granulations to form over the denuded muscles, for both the adductor and flexor pollicis were laid bare. We then grafted, covering the entire surface with new epithelium, and with the gratifying results which you now see. The man's thumb is in a normal position. To be sure, we had far greater chance for success than in the case of leg ulcer, for there we were dealing with necrosed and diseased tissues, while here the parts were healthy and well nourished.

Look at the man's fingers. You will remember that these also were greatly contracted but are now nearly straight. It is the tendency of these contractions to increase, as additional deposits of cicatrical tissue are formed about the tendon, until finally a useless hand is the result.

What was done in this case, was to cut down upon the tendons, and nearly through them, severing fully three-fourths of their substance. The remaining fibres acting as a suture to keep the ends in apposition. The fingers were then stretched until straight, and put on splints. The stretched tendons gradually became strengthened and the gaping cuts in them healed up, the fingers remaining straight.

LUPUS.

The next patient is a man suffering from lupus who has been treated with Koch's lymph. One milligramme of the lymph was injected on Monday, two milligrammes on Tuesday, and three on Wednesday—none since (Saturday). The improvement has been very marked, and healing has already begun to take place.

I am not prepared to make any definite statement regarding the value of Koch's lymph, but am free to acknowledge that its action upon local tuberculous processes—and lupus is one of these—is undeniable. What will be the result of this treatment I cannot now say. The man may make a complete recovery, as I have seen many such follow the use of Koch's lymph; the disease may, however, return after a time. Time alone will decide the case.

The principal reason for my bringing this case before you was in order to demonstrate differential diagnosis between it and a case of epithelioma.

DIFFERENT DIAGNOSIS OF LUPUS AND EPITHELIOMA.

Let us first study their similarity. Both have ulcerating surfaces, and in both the skin slopes down toward the ulcer, and their general appearance is not at all unlike. You will notice, however, that the surrounding

skin, in the case of epithelioma, is indurated and hardened, while in the case of lupus the skin is freely movable over the surface of the granulations. Often, indeed, a narrow bridge of skin will stretch across the ulcerating surface. This feature is peculiar to tuberculous ulcerations. In tuberculous processes also, the granulations extend under the skin, while in epithelioma the skin is destroyed as far as the ulceration reaches.

Under the microscope the difference is still more marked. In the granulations taken from a case of lupus we find round cells with a nucleus, these are tubercular cells. Often also we find much larger cells, containing three or more nuclei, these are known as the giant cells of tuberculosis. Their existence is due to the fact that the formation of the nuclei occurs more rapidly than the segmentation of the surrounding protoplasm.

In epithelioma the microscope shows a totally different picture. Before us lie myriads of epithelial cells of all shapes and forms.

The most definite and perhaps practical means for the differential diagnosis of lupus and epithelioma is afforded us by Koch's lymph. For it invariably causes a re-action in all cases of local tuberculosis, while it has absolutely no effect in cases of epithelioma. This fact alone is sufficient to make for Koch's discovery a permanent place in medicine.

SCROFULOUS ULCERATION OF CERVICAL GLANDS.

The child that lies before you presents another, and a typical form of local tuberculosis. It is a very ill child, and its condition demands immediate attention. In the neck, over the region of the cervical lymphatic glands, is a large dense tumor—very large for a child who has not seen more than two summers. Near the angle of the jaw the growth has ulcerated, and a cheesy matter is discharged from the opening. We see, also, that the opening is bridged by a narrow strip of skin, and this fact gives us an immediate clue to the diagnosis, as you remember I referred to this peculiarity as being typical to tuberculous ulcerations. We find that the mass is slightly movable and from its appearance and location, are forced to the conclusion that the growth is a scrofulous ulceration of the cervical glands. This conclusion is strengthened by an examination of the patient's temperature chart, which shows a very high evening temperature. The case, therefore, demands the immediate removal of these glands, and were it not for the fact that the parents' consent to the operation has not yet been obtained, I would perform it to-day, but will be forced to delay it. In the mean time every effort will be made to improve the child's physical condition, so that it will be better able to stand the operation.

It is in these fair-skinned, blue-eyed children that we generally find scrofula. In all probability in this case other glands are also affected.

TRAUMATIC INFECTION.

The last patient which I shall have the pleasure of showing you to-day, is this man who came to us, not long ago, to be treated for a very painful tumor over the glands in the neck. The growth is not clearly defined, but of irregular shape and very painful; the surrounding skin is also inflamed and painful. We evidently have an acute inflammatory process here and must look further for the cause. We find that a short time previously he had received a contused and lacerated wound of the scalp by being struck with a rock, but to which he had paid little attention.

All wounds if improperly dressed or treated are liable to infection, but contused and lacerated wounds, where a large amount of tissue is destroyed, are peculiarly so disposed, the wide-open mouths of the lymphatics being always ready to imbibe the poisonous germs.

Let me here tell you that nine-tenths of all acute inflammatory processes are caused by the pus microbe, the *streptococcus pyogenes aureus*, and it is an infection from this source that we have before us.

Never, gentlemen, never be tempted or led to apply a hot poultice to such an inflammatory process. What could be more conducive to the propagation of these poisonous germs than the application of heat and moisture! What season of the year so fruitful of infectious diseases as the hot and wet months of summer? To apply a hot poultice to such an inflammation is to court further infection, when the real object in view is to retard it. What is demanded is, first, an opening up and cleansing of the wound, which has been the door to the infection, and the removal from it of any infectious matter; it should then be dressed aseptically. Next, local applications to the point of infection, of such a nature as will check the suppurative process and cause the death of the microbe. For this purpose antiseptic solutions are alone available. *Wet*, if you like, gentlemen, but never *hot*.

ANTISEPTIC POULTICE.

Take a solution of 1 : 3000 of corrosive sublimate, or better still, an acid solution of 1 : 3000 of the same, as it is stronger, and make a cold poultice with linseed meal, for the meal will hold the moisture better and longer than any cloth, and apply this over the seat of inflammation, and the suppurative process will soon cease, and the pain and swelling disappear.

The modern poultice is an antiseptic poultice.

This is the bent of modern surgery, the prevention of infection, and the maintenance of aseptic cleanliness. By these means we may cope with ulcerations on the surface, and check the process of inflammation even when hidden deep in the tissues. These are lessons worthy of your careful consideration and earnest study.

ACUTE PARENCHYMATOUS NEPHRITIS, WITH ACTIVE PULMONARY CONGESTION.

BY PROF. CHAS. G. STOCKTON.

BUFFALO GENERAL HOSPITAL.

Gentlemen:—The history of this patient is as follows: Aged 42, married, Canadian, carpenter. Family history negative. The patient had measles and scarlet fever when a child, apart from this he has always been well and he denies any venereal trouble. On Wednesday, a week ago to-day, while at work, he was taken suddenly with a severe chill, followed by fever and nausea, but he has vomited only two or three times. The attacks were also attended by considerable headache, which has continued with intermissions up to the present. He stopped work, went home and to bed, and he has been in bed most of the time since. He has no appetite and the nausea has continued. Since Thursday he has had griping pain in the abdomen, and diarrhœa existed from Thursday until Monday. On Sunday he had a second chill. The patient is a moderate drinker and he smokes to excess. On entering the hospital his pulse was 98, temperature 103.4°, respirations 38.

The patient, as you look at him, will impress you at once by his appearance of apathy. The man is evidently very sick, very feeble, and somewhat cyanosed. His breathing is between 40 and 50 a minute, his pulse has varied between 100 and 110, and his temperature between 103.5° and 104.5° since his admission. With these symptoms and from the man's appearance, we would say that there was something wrong with his respiratory apparatus, and, to follow the symptoms up more carefully, we find that he has a moderate cough and considerable expectoration of muco-purulent matter which is very tenacious, and which sticks to the bottom of the cup and looks like the expectoration of catarrhal pneumonia. In all probability the prostration and apathy depend either upon the severity of the fever, or upon some toxæmia, or the two combined. The toxæmia may arise from his lung trouble or from some other condition.

The tongue, which he protrudes slowly, is dry, brown and cracked. He says his hearing is good, but you observe that he understands slowly, giving one the impression, at first, that he is deaf. The condition of the tongue and the slow cerebration are evidences of a toxæmia.

As we inspect his breathing, we find it rather shallow, but symmetrical. He breathes as though his lungs were not properly filled with air and as though the bases were particularly involved. This condition might come about from inflammation of the lung and the exudation of fluid into the substance of the lung, from effusion around the lung, or merely from congestion of the lung. I find everywhere, anteriorly, a feeble respiratory murmur, with harsh sounds and some so-called dry râles in the upper part, some moist râles and a few sibilant sounds lower down. The vesicular respiration is harsh, superficial and very imperfect. The same condition is found behind, the breathing is particularly obscure and impure at the bases. The breathing behind is accompanied by more sounds of disease, such as râles and sibilant breathing, than in front. I regard the evidences, so far as the lungs are concerned, both from the history of the case and the physical examination, to be in favor of congestion of a high degree with a certain amount of inflammatory trouble in the bronchial tubes, the amount of actual inflammation being much less than we would expect to find with the rapid breathing, high temperature, frequent pulse and the general prostration of the patient. I do not find enough trouble in the chest to account for the general condition and that was what impressed the house-staff when they first saw the man.

While the pulse is somewhat ample, it is very feeble, and still it has more resistance

and greater tension than we would expect in typhoid fever with this temperature. On examining the abdomen to make sure that we are right in excluding typhoid fever, we find it slightly distended with gas. The skin looks normal, there is no eruption, and pressure over the abdomen discovers no points of especial tenderness. There is little evidence of abdominal trouble and the bowels have moved regularly since the diarrhœa. Last night he was given epsom salts and, as a result, he had three or four large involuntary stools, not typhoidal, but of a light yellow color and with a distinct odor of urine. He has passed three pints and a half of urine in the last twenty-four hours. Two days ago there was a very slight discharge of condensed urine, yellowish red, very acid, containing a large amount of albumen. The sediment contained a large quantity of débris, renal epithelium in abundance, and granular blood and epithelial casts. The blood casts were conspicuous by their abundance. There were no fatty nor hyaline casts.

Now let us look at the case from the standpoint of the information derived from the examination of the urine. Here is a man apparently in good health, suddenly seized with chill, fever, prostration, vomiting; who has been confined to bed for a week, at the end of which time we find him still very much prostrated, with a frequent feeble pulse, high temperature and brown cracked tongue, with scanty urine, and with evidence of lung trouble. Which of these two conditions: the nephritis or the congestion of the lungs, was primary? It is not common for an acute lung trouble to cause an acute nephritis, but it is quite common to have congestion of the lungs and a certain amount of disturbance of respiration with acute nephritis. The evidence points, therefore, toward the conclusion that this man was seized with an acute nephritis at the time of the initial chill.

If we had not examined the urine we should say that the man was seized with an acute lobular pneumonia, and from the high temperature and prostration we would make a grave prognosis; but knowing the condition of the urine and having an explanation of these symptoms of prostration, the prognosis becomes better though still guarded. From the examination of the urine we would conclude that this is a case not of chronic but acute Bright's disease, from which recovery is to be expected. The lung trouble is somewhat secondary to the kidney lesion. I say "somewhat secondary" because at the same time that he caught cold and the nephritis started, the lungs might have become involved. But the blood going to the lungs is loaded with excrementitious products which have irritated the pulmonary tissue, and the condition of the circulation is depressed and the pulse frequent. This case would probably result fatally from the condition in the lungs being maintained by the disease in the kidneys if the latter organs were not properly attended to.

The cause of this attack we do not know satisfactorily. There is no history of falling into cold water or other marked exposure. The measles and scarlet fever occurred too long ago to have any causal relation. They might have been followed by a nephritis which has become chronic and has been lighted up into an acute exacerbation, but the condition of the urine as reported to me does not indicate the existence of such a condition. The heart is apparently sound, though excited in its action, there is no evidence of previous cardiac valvular lesion nor of acute endo-carditis. Although we cannot account definitely for this nephritis, we must remember that it is not uncommon to have an acute Bright's disease coming on without any special exposure, just as on the other hand, exposure to wet and cold is not always followed by this trouble.

It is important that a case like this shall receive early treatment. I directed that the patient's back be thoroughly cupped, that his feet be bathed in hot water, and, that he have hot vapor baths. As a result of the treatment the sweating was induced and the amount of urine passed increased very largely. In proportion as the elimination by the kidneys increases his symptoms will subside. He was also cupped over the lungs and the essential oil of camphor was used as a stimulant application. I did not use turpentine because it is a stimulant to the kidney and a kidney already overstimulated by inflammation should not be exposed to the danger of further irritation. The treatment was directed principally to the skin, both to aid elimination by exciting sweating and to relieve the kidneys of their engorgement by bringing the blood to the surface. Magnesium sulphate was also given to carry off the poison by the bowels and to relieve the circulation by depletion. A light diet was ordered, the nervous symptoms were controlled by bromide of potassium, assisted by moderate doses of chloral. Internal medication directed to the kidneys is to be avoided in such a case as this, although it would be perfectly safe to give potassium acetate or

sodium benzoate, which are un-irritating diuretics. The former is especially indicated when the urine is highly acid, the latter usually increases the acidity of the urine, but it may often be given with benefit even in cases of acid urine. Potassium acetate should be given in doses of fifteen grains once in two hours with infusion of digitalis. Sodium benzoate is given in five grain doses every two hours with or without the digitalis. Digitalis is given with a view to increasing the pressure of blood in the kidney.

This is the only medication which I think should be directed toward the kidneys themselves when they are acutely inflamed or acutely irritated. The purgatives act indirectly on the kidneys in the most favorable way possible, lessening their labor of excretion and removing the effete products which would otherwise accumulate in the blood. The necessity of examining the urine, especially in cases like this of congestion of the lungs, is the most important lesson to be learned from this case.

CLINIC THREE DAYS LATER.

These are specimens taken from the patient whom you saw on Wednesday. His urine was increased in quantity and the condition of his kidneys improved until they were functionally fairly well, but, contrary to my expectations, the man did not improve under the treatment that should have unloaded the venous side of his circulation, he grew weaker, suffered more and more from dyspnœa, and finally died by failure of respiration.

The post-mortem revealed, as the physical examination two days before had promised, a very acute congestion of the lungs. The right lung showed rather more infiltration than could be classed under the head of congestion, there was very complete œdema, particularly of the lower lobe. The upper portion of the right lung and the left lung were markedly congested. The lung now crepitates very feebly and is still dark in color, though it has bleached out somewhat since the autopsy.

The examination further revealed that the kidneys, instead of being healthy previously to this acute attack, as I supposed from the history of the case and the report of the urine analysis, had been for a long time diseased, the man having the so-called large white kidney—the chronic parenchymatous form of diffuse nephritis. There was an acute attack which was superadded to the chronic kidney trouble. These kidneys did not appear red and congested as other organs of the body did, and you see now how pale they look. But if you examine them carefully, you will find injected points lying among large masses of comparatively white tissue. These are not the red engorged kidneys which I expected to find. Does this mean that the man did not have the acute inflammation which I described to you? Not at all, it means that the kidneys were congested like the other organs of the body, but they were pale because their tissues had become so changed by chronic disease, which I did not suspect because the report of the urine analysis misled me—that the areas remaining for blood to enter were small. These kidneys were red and congested for such kidneys, but yet they contained far less blood than is normal. It is precisely what we expected to find, but occurring in the midst of another change.

The heart was somewhat enlarged but there was no valvular lesion. On account of the swollen condition of the lungs, this enlargement was not manifest at the physical examination. Although the predominating inflammation in the kidney was parenchymatous, yet there was some fibroid change which would cause resistance to the onward flow of the blood and thus produce hypertrophy of the heart. There were a few atheromatous markings just above the cusps of the aortic valves.

The spleen and liver were congested. The stomach was large but empty, and held nine pints of water. The great majority of cases of dilatation of the stomach, occur in those who have no stenosis in the alimentary canal, and there was no stenosis here. Stenosis below the stomach, however is quite apt to be a mechanical cause of such a dilatation.

COMMUNICATIONS.

CANCER OF THE RECTUM.[1]

BY L. L. McARTHUR, M. D.
CHICAGO, ILL.

In my brief experience as a surgeon it has been my fortune to number among my cases six examples of this disease in various stages of advancement, as follows: one, female, cancer within two inches of anus, colostomy and excision; one, female, cancer involving anus and lower rectum, colostomy, excision; one, female, cancer involving

[1] Read before the Chicago Gynecological Society, January 16th, 1891.

anus and rectum, colostomy, no excision; one, female, cancer high in rectum, no colostomy, curettage; one, male, Kraske's operation, colostomy (Dr. Fenger's case); one, male, no excision, curettage, no colostomy. With these there were no deaths as a result of the operations, though Kelsey states that the mortality for excision is thirty-three per cent.

Let me, before presenting the history of a case, call your attention to the following significant facts: In a careful inquiry—made by Cripps—into the family history of a large number of cases of cancer, the percentage of mortality by that disease was found almost identical with that of the general population by the same. In a very large proportion the disease is so situated that an infection could have been plausibly possible. Infection of husband from wife suffering from cancer of cervix has been in several instances well authenticated by competent observers. A much greater frequency exists near the sea than inland, and both Sheurlen, of Munich, and Thoma, of Heidelberg, have demonstrated the frequent presence of micro-organisms (psorosperms), which, in their opinion have a specific relation to the causation of this disease.

In relative frequency of type, cylindrical-celled, flat-celled (epithelioma), and papillo-carcinoma stand in the order named. Allingham, who, in 1886, had already reported thirty-nine cases of excision, is authority for the statement that rectal carcinoma usually runs its course in twenty-four months. He notes, however, cases ending in death in from four months to four years. His experience had been also (contrary to that usually noted) that the disease occurs more frequently in males than in females, and that its most usual site is within three inches of the anus. Cachexia appears at a very early period. The ages of greatest frequency range from 45 to 55, though it has been noted as early as the age of 6. Cancer in this location frequently escapes the observation of the general practitioner, being mistaken for hemorrhoids; and, for this reason, too great care cannot be taken in the examination of middle-aged people in whom there are symptoms referable to the rectum.

Treatment.—James Adams urges that in every case there should be made a colostomy, saying: "In cases of any but the slightest degree the operation of removal may prove incomplete and the disease speedily return; . . . after complete extirpation of the lower end of the rectum the subsequent contraction is often very great, and even at times intractable, and in any case the healing of the wound will be much expedited and the chances of local recurrence diminished by diverting the course of the fecal matter."

Allingham justly condemns the making of a colostomy in every case of cancer of the rectum, stating that "often neither pain nor obstruction will ensue in months, or they may never occur and the patient may die from some other malady. Of course, if a surgeon at once persuades all his patients who have malignant growths in their rectum, to submit to colostomy under the promise that life will be prolonged or suffering averted, he will have many cases to report and very good but very valueless statistics."

There are four factors which make this operation justifiable: First, because the mortality of rectal excision can be immensely reduced by diverting the fecal matter from the site of the excision. Second, because there are in some of the cases excruciating pains, caused by the passage of fecal matter over the ulcerating carcinoma, which can be relieved by a colostomy, winning at the same time for the surgeon the gratitude of the patient. Third, because in those cases in which the disease extends higher than the lower three inches, there is sure to be sooner or latter a stenosis. This Jessop has demonstrated at the late meeting of the British Medical Association. He calls attention to the fact that where the disease is low down in the rectum complete obstruction seldom occurs, and that the opposite is true where the disease is high up. The reasons for this difference are to be found in the anatomy of the parts themselves; for while the rectum, as it approaches the outlet, becomes more closely applied to the sacrum and pelvic wall, in its superior portion it is comparatively free. Thus the contractile action of the colon is exerted with effect in forcing its contents through the contracted ring when that ring is fixed and immovable. But when the narrow portion is freely movable, as it is when situated in the upper portion of the rectum, the efforts of the bowel above succeed only in invaginating or otherwise displacing the growth, and fail altogether to effect any onward movement of the contents (Kelsey). Fourthly, it has been the experience of most operators that the cicatricial contraction which follows such an operation is often excessive and intractable, as in any of the inflammations, specific or simple, which so frequently result in a stenosis here. Allingham has found that if he would maintain the gut in a useful and patulous condition, it is necessary to have the patient

wear a guttapercha tube, which can be removed at will. Finally, an argument which needs no champion is the fact that thirty-three per cent. of all cases of carcinoma (as shown by the researches of Jessop in one hundred and two cases which were allowed to follow their course without any surgical interference) die from obstruction.

To sum up, I would urge that *prior to every excision in every painful case*, and in every case where the disease was situated *high up*, that a colostomy be made, the choice being in favor of the left inguinal. The method of excision recommended by the French surgeons has been that which I have utilized, preceding each excision, however, by a colostomy two or three weeks prior to the final operation. In this the main feature is a deep incision which exposes the posterior segment of the rectum from the anus to the coccyx, when it is an easy matter to dissect out the rectal tube until one comes to the anterior portion. Here, if it is found that the disease involves one or more of the coats of the vaginal wall it is, in my opinion, best to remove a longitudinal segment of the entire thickness of the same, as it both renders the operation safer and more easily accomplished, and does not, as Kelsey would infer, greatly increase the danger. When the sphincters are involved a circular incision should surround the anal opening, and all be removed together. Dr. Guerin's suggestion that the gut be cut through by the ecraseur, modified by the passing through the normal gut of several threads for purposes of fixation of the proximal end after removal, as recommended by Verneuil, has been the procedure employed in the excisions I have made. The proximal end is then to be stitched to the posterior angle of the perineal incision or to the left side of the coccyx, and, after stitching up the vaginal wound in much the same way as after a posterior colporrhaphy or laceration, deep transverse perineal stitches render the making of a new and extensive perineal body very easy.

When the type of the disease is that of the cauliflower-like growth known as papillo-carcinoma, I believe the best practice is to remove it with the curette rapidly and well down to the base of the growth. The hemorrhage, very active and easily provoked while in the soft tissues of the tumor, is easily controlled when the base has been reached. In two such cases I have been successful in for a time relieving them of their distressing symptoms, but have not been able to follow their history for more than six months after operation.

The case I now report is of interest in showing the benefit to be derived from surgical interference.

CASE.—After having suffered with what she believed to be hemorrhage, the patient came to St. Luke's Hospital a year and a half ago, with symptoms of absolute stenosis of the intestine, and requiring immediate relief. The diagnosis of carcinomatous obstruction of the rectum being made, a colostomy in the left lumbar region was done, with relief to the urgent symptoms. After the lapse of three weeks, the artificial anus being well established and healed, an excision of the rectum was practiced after the usual methods by a deep posterior incision from the anus to the left side of the coccyx well down to the posterior wall of the rectum, which was then dissected laterally until the vaginal wall was reached, which was found to be involved to the level of the posterior lip of the cervix in the carcinomatous growth. The posterior wall of the vagina was removed, as well as the rectum, to this level, including the sphincter muscles. The rectum was stitched to the skin of the left side of the coccyx, and deep transverse stitches were inserted to make a new perineal body. There was a speedy union and rapid convalescence. After the lapse of one year she returned to me with the artificial anus presenting a normal rectal mucous membrane normally attached to the integument to the left side of the tip of the coccyx, with the artificial anus almost closed from surgical interference by Dr. John E. Owens, but with a return in the perirectal tissue of the original trouble to such an extent that the line of cicatrix in the vaginal wall posteriorly and in the anterior rectal wall was again invaded by the new growth, which was beginning to cause painful defecation as at first. The patient, being much frightened with the symptoms of a return, came to me requesting a repetition of the operation. This at first I refused to make, telling her that I did not believe her longevity could be increased by such a procedure nor her condition materially improved. She then consulted Drs. Parkes and Fenger, both of whom, she stated, promised to operate upon her and offered her hopes of at least temporary relief. Coming back to me with this history and the threat that if I would not operate somebody else would, I had her admitted, in the last week of September, 1890, to the Michael

Reese Hospital, where I excised the portion of the rectum which had been drawn down and attached to the integument, at a point on a level with the posterior lip of the cervix. I dissected out laterally, in so far as I could reach, all indurated tissue. I then found that it was impossible to bring the end of the rectum down to the integument, no matter how far I might extend my posterior incision, and decided that the best thing I could do would be to suture the end of the rectum at the top of the vaginal incision after the cicatrix had been removed. I did this, then united the vaginal mucous membrane, much as is done for a laceration or operation for posterior colporrhaphy, and brought the lateral pelvic tissues together by very deep, heavy silk sutures, and, strangely enough, obtained a perfect union. The patient has, since the second week in November, been at home, is feeling well, has gained in weight, and has several times come to my office, each time stating that she feels better than she did during the year which elapsed after the first operation; that she now has control of the bowel and is capable of evacuating its contents without any artificial assistance—that is, without a douche, which I advised when she first left the hospital.

I believe this to be a unique case. I do not find, in what literature I possess, reference to a similar operation. I have no doubt that she will ultimately have a return of the trouble, because the cicatricial contraction which normally occurs with any inflammatory deposit about the rectum, whether from specific or simple inflammations, has already produced some suspicious induration. (See *Society Reports* for discussion.)

AN INCARCERATED RETROFLEXED PREGNANT UTERUS, WITH GREAT DISTENTION OF BLADDER—SUCCESSFUL REPOSITION—RECOVERY. [1]

BY CORNELIA KAHN, M.D.
PHILADELPHIA.

This grave complication of pregnancy is comparatively rare, yet the importance of its early recognition and prompt treatment is so evident, that a report of every case of this nature must be of value to the profession. Gregoire, in France, Sir W. Hunter, in England, are said to have been the first to fully appreciate the existence of posterior displacements of the gravid uterus, and to have called attention to them. They are far more difficult to manage, and more serious in their consequences than those met with in the unimpregnated state, but of less frequent occurrence, or, at least, fewer come under the notice of practitioners.

This may be due to the fact that in the majority of cases, spontaneous cure occurs about the end of the third month, and the women have had no symptoms urgent enough to compel them to seek medical advice, or a miscarriage occurs, the cause of it not being traced to this condition. If this restoration does not take place of itself, or an endeavor made to rectify the abnormal position as soon as an augmentation of the pains and functional disturbances of bladder and rectum incident to first months of gestation, give evidence of the nature of the trouble, grave results may ensue. This retro-deviation may then end either in abortion, incomplete rectification or incarceration.

Jaggard says, that "The persistence of complete retroflexion and consequent incarceration must be regarded as exceptional events;" but the dangers to be apprehended, when they do occur are great. Cases have been recorded of proctitis, peritonitis, cystitis, sloughing of vesical mucous membrane, rupture of bladder, rupture of posterior vaginal wall, as well as of deaths from shock, exhaustion, uræmia, following these conditions. Other serious complications have also been noted. In the *Lancet* of December 31, 1887, page 1311, a case of retroversion followed by abortion and *sloughing* of vesical mucous membrane is reported. Elliott in "*Obstetric Clinic*" (1872) describes three cases at Bellevue Hospital with one death, and Barnes had four deaths from uræmia, and De Paul one death.

The sequelæ of urinary retention are of gravest prognostic moment, not only sloughing of a part or of the whole vesical mucous membrane, but necrosis of the bladder itself and its peritoneal covering has occurred. Haultain, in the Edinburgh Medical Journal, June, 1890, relates a case of exfoliation of the entire bladder wall, seven weeks after the reposition of an incarcerated gravid uterus. Abortion had been induced by the manipulations to replace the organ and incurable incontinence was the result of the death of the vesical tissue (replaced by connective tissue growth). The following are the notes of the case which forms the basis of the present paper.

C. B., aged 34, German, married, presented herself on Sept. 8, 1889, at the dis-

[1] Read before the Alumnæ Medical Society of Philadelphia.

pensary clinic of the Woman's Hospital in great distress, complaining of intense pain in the abdomen and that she could not "pass her water." With great difficulty, she was placed upon the table for examination. To lie down seemed almost impossible, so severe was the suffering occasioned by the effort to remain in that position. On exposing the abdomen, we saw immediately that there was a peculiar tumor to diagnose. The distension was most marked, the integument having a bluish thinned-out appearance, suggesting the presence of a rupture. The swelling was not uniform, although it extended to the umbilicus; for in this region, there was a pointing or bulging which simulated a hernia.

Palpation and percussion were too painful for us to elicit any physical signs, and a vaginal examination (exploration) was made to ascertain the condition of the pelvic organs. The cervix was found drawn up near the symphysis pubis and a round body was felt in the posterior *cul de sac*. The os uteri having the softened velvety character of early pregnancy, we questioned the woman and found that the menses had last appeared in June.

An attempt was made to empty the bladder with a metallic catheter, preparatory to more thorough examination, but failing to draw any urine, although the meatus urinarius was accessible, we called upon Dr. Fullerton to assist us. She suggested our using the flexible English catheter, and as this instrument did its work, we witnessed the peculiar tumor progressively diminish and disappear. The patient's face, relieved of its suffering and strained look, gave evidence that the pain had ceased.

This was a striking example of the importance of the use of the long flexible catheter in diagnosis of vesical complications in women. Failure to draw urine with the metallic catheter often misleads the physician as to the real condition present, and serious results have been reported.

Three pints of urine were drawn off, but the bladder was purposely not completely emptied. The urine was found to be of a sp. gr. of 1015, neutral reaction, and without albumen.

Bi-manual examination now confirmed the supposition that there was a retroflexed, incarcerated pregnant uterus. Freed from her urgent symptoms the patient was allowed to go home with directions to assume the knee-chest posture often during the day, and to try to urinate while in this position, or bending forward, and return to the dispensary in a few days. On the 11th, three days afterwards, she presented herself again with no marked improvement in her condition, the bladder being again distended, although not quite to the same size as before.

Catheterization again relieved the pressure symptoms, but the patient was advised to come to the hospital for treatment that could be directed towards correcting the displacement. On the next day, she was admitted, and the following history elicited:

Patient had a good family history and had a healthy childhood. Began to menstruate when fifteen years old, and although not painful the flow was always irregular. Constipation was a persistent habit with her. She was married twelve years before, in her twenty-third year,—had five children, the youngest being two-and-a-half years, and no miscarriages. When, after her first confinement, menstruation was again established, it was painful, although it had not been so previously. She stated that "bearing down pains with falling of the womb" and some trouble with urination had occurred following the puerperal periods, with the last two children.

Both these latter symptoms, however, disappeared gradually without treatment, the patient having an interval of comparative comfort. Conception again took place. As already stated, she ceased to menstruate in June, and began then to experience anew the "bearing down pains," the sense of weight and fullness in pelvis. She continued doing her usual work, including the lifting of heavy washtubs, etc. In the second month, micturition became more frequent, effected with difficulty and accompanied by pains in the back and down the legs. She was still of a very constipated habit, although there does not seem to have been marked distress with defecation. Vesical tenesmus gradually increased, micturition was very difficult, and when she came to us the pain had grown intense, and the flow of urine very scant. Every morning there was swelling at the hypogastrium and inability to urinate until after moving about for a couple of hours. Both walking and sitting were alike painful, and the nervous system was necessarily affected to a marked degree.

At last voluntary micturition became impossible. Dysuria gave way to the "incontinence of retention," and from Saturday evening to Monday morning, when the patient came to the dispensary, scarcely any urine was passed, coming merely "drop by drop." Her suffering was extreme, the in-

effectual straining was intolerable, and she was forced to seek relief. Her visits to the clinic and the treatment received have been already detailed. Having now entered the Hospital 5 days after first coming under observation she was put to bed in the knee-chest position, in which she lay for an hour, only to resume it again after resting awhile on her side. After emptying the bladder, Dr. Fullerton, with careful manipulations (two fingers in the vagina, making gentle pressure upon the retroflexed fundus through the posterior *cul de sac*), succeeded, to some extent, in disengaging the body of the uterus from its imprisonment under the promontory of the sacrum, and the patient gave expression to a sense of relief and comfort after this procedure. The vagina was now packed posteriorly with wool pledgets, and a No. 8 flexible catheter inserted in the bladder and retained until the next day, so as to prevent a full bladder from interfering with the correction of the uterine displacement. The necessary adjunct to this line of treatment—the knee-chest position was not forgotten, and the patient was ordered to lie thus as constantly as possible—pillows being placed under her to give her the necessary support. On the following day, the uterus was found in a much better position, the fundus having risen into the abdominal cavity. The pledgets and catheter were now removed and an Albert Smith soft rubber pessary inserted—the patient still remaining in bed. She was now able to urinate without pain. Two days later, the fundus uteri was anterior, the cervix posterior. Patient was now in good condition, gestation not seemingly affected by either the displacement of the organ or by the efforts at restoration to its normal position. The patient was discharged from the Hospital with instructions to assume at times the knee-chest position, to avoid constipation, to empty bladder regularly, and to return when six months pregnant to have the pessary removed, if there should be no occasion, in the interval, to present herself earlier.

From this time forward, she experienced no further trouble, and succeeded in securing a daily movement of the bowels, thus avoiding one factor in the causation of uterine displacements. In due time she was delivered, in the Woman's Hospital, of a fine child, after a normal, easy labor. The recovery, in this case, is thus shown to have been a prompt and permanent one, the danger that threatened was averted, and the lives of both mother and child preserved.

In reviewing the history of this case, there are some points I would comment upon. Authorities differ as to the occurrence of posterior displacements during pregnancy and also as to their abrupt or gradual origin.

Barnes says that retroflection, pure and simple, does not take place in an impregnated uterus, but that it supervenes on some degree of retroversion or prolapse. According to Tyler Smith, "retroflection of the gravid uterus presupposes retroflexion of unimpregnated organ."

Meadows "does not see any causative relation between misplacement of the non-pregnant and pregnant state." Jaggard admits the possibility of *acute* retroversion in a prolapsed pregnant uterus. Many others might be quoted to show the differences of opinion. It is also an open question whether the distended bladder acts as a cause or is a result of the retro-deviation. Sir W. Hunter's opinion "that retention of urine was the primary cause seems to be modified now by the belief that it is an important adjunct in its production, and an obstacle to its reduction, rather than the initial cause.

In the case I have reported, the history of recurrent attacks of bearing down efforts and difficult micturition, with obstinate constipation and painful menstruation since birth of first child, would seem to favor the view of some form of displacement having existed at times during these years.

The early appearance of severe symptoms after this last conception would seem to confirm this, and such being the case, it is easy to conceive how the continual straining at stool, vesical tenesmus and pressure of abdominal muscles in the heavy lifting, would act to depress the fundus still more and thus establish a retroflexion. The restitution of the organ was opposed also by the distension of the bladder, which acted not only by pressure, but by its dragging up the anterior wall of cervix in its ascent into the abdomen. The uterus, thus crippled in its natural movements to free itself from its imprisonment, remained impacted in the hollow of the sacrum.

Diagnosis of these retro-deviations says Parvin, should not be difficult if a thorough examination be instituted, but errors have been made. W. S. Stewart lately reported a case that was diagnosed as a fibroid going to term with the retroflexion unreduced, and in danger of serious exhaustion at time of labor.

In treating this condition of incarceration much difficulty has been experienced in many cases in introducing the catheter. This woman was fortunate in that the meatus urinarius was not so inaccessible.

Various instrumental methods have been employed to rectify the malposition; but gentle vaginal and rectal taxis in the knee-chest posture, is thought to cause less trauma, and must be tried first. It often has been necessary to administer chloroform before reduction was possible. Dr. Playfair, in two cases, effected a cure in twenty-four hours with continuous elastic pressure by means of a pyriform India rubber bag distended with water or air placed in the vagina. Barnes says, frequent daily catheterization cures in a week. Authorities also differ in their modes of after treatment. Bandelocque resorts to the use of the pessary. Cazeaux advises the horizontal position up to sixth month of pregnancy. Jaggard recommends rest in bed in the latero-prone position until the uterus is of sufficient size to retain its position in the abdominal cavity.

With our patient, the line of treatment was simple and rational. The first measure to be resorted to before attempting reposition of the displaced organ, the evacuation of the bladder, was promptly done, and its refilling prevented by the constant drainage through the retained catheter. The knee-chest position and packing of the vagina, after the manipulations, and ridding the rectum of all fœcal accumulations, were the elements of successful treatment, which lasted only three days. The use of the pessary, adjusted before patient left the bed, with due attention to the functions of bladder and intestines, and the frequent employment of the genu-pectoral posture, assisted in maintaining the pregnant uterus in the normal relation to the line of the pelvis. Rest in bed for any length of time was not practical, as there was a family of children to be cared for.

The capacity of the distended bladder, in the case reported, was about fifty ounces, but in one of those related by Elliott the bladder contained the remarkable quantity of one hundred and forty ounces. Notwithstanding this fact, the patient did not suffer as had ours, having no symptoms urgent enough, even to direct the attention of the physician to this viscus. In the case, already cited, of Haultain's the bladder held as much as one hundred ounces of porter-colored, offensive urine, even though its walls were in a state of decomposition and consequent diminished muscular elasticity.

Dr. E. Richter has found that fresh urine destroys the bacilli of anthrax, cholera and typhus.

Society Reports.

THE GYNECOLOGICAL SOCIETY OF CHICAGO.

Dr. L. L. McArthur read a paper on (see p. 532).

CANCER OF THE RECTUM.

Dr. C. T. Parkes.—The case as presented by Dr. McArthur is very interesting to me, and, I think, he is to be complimented on the skillful attention he has given to this patient and the success which has resulted from his interference. It seems to me, we must look upon this operation for the relief of this terrible disease mainly as a palliative treatment; it is seldom curative. Certainly it removes the manifestations of the disease for a time, and, above all, is desirable, as Dr. McArthur has said, from the fact that it relieves the patient from the local distress caused by the disease, especially from pain, which is present in all these cases, and the symptoms of on-coming obstruction which accompany the later stages. My experience with it has been rather moderate; as I recall the cases I have met, and have thought a little about them since receiving the notice of this meeting, there come to mind *nine* cases in which operation has been done for excision of the rectum, two cases in which simple incision was done, and two cases which are interesting from the fact that they accompanied the presence of ovarian tumors, and one case which was situated very high in the rectum and no interference was practiced—in all fourteen. Of the nine cases in which excision was done, five were operated upon according to the plan of Kraske; in the others success was attained in the removal of the manifestations of the disease by merely external incision of the soft parts, without interference with the sacrum or coccyx.

Of these cases, which represent a period of work of eight or ten years, some are living to-day, but most of them are dead. None of the cases of excision were preceded by an opening into the colon. I think the statistics which the doctor gives as to the mortality of the disease as the result of immediate excision is based upon the results of pre-antiseptic days rather than the present. I am not one of those who believe that the contact of fecal matter with the wound is at all times hurtful, as I have had in my experience many cases in which wounds have been bathed in fecal matter without any septic condition following.

I can see readily enough that the previous operation for an artificial anus can be a benefit to these cases, and will likely predispose to the earlier and more rapid healing of the rectal wound, simply because it prevents the fecal material from passing over the raw surface. The operation of forming an artificial anus in itself is of little consequence, and should be, as a rule, attended with little fatality. That it is a necessary procedure I am not inclined to believe; neither do I think that it makes very much difference in the mortality. As far as the relief given in preventing the discharge from coming over the wound is concerned, I have to agree with Dr. McArthur's statements.

The disposition is in all these cases to a comparatively rapid return of the disease. We must always remember, in the treatment of cancer here as well as elsewhere, that the operation itself may stimulate or produce infection. In two cases in which the operation was done by myself, there followed no local manifestations of return of the disease, but within eighteen months there appeared to be general infection of the entire body, as shown by evidence of disease in the liver and in the lung, and the presence of cancerous nodules of different sizes in the integument.

There is no question but that every one of these patients will be grateful to the surgeon for the removal of the manifestations of this disease; but, as I said before, we must look at it in the true light and tell these patients that the relief is only temporary and cannot often be curative where the disease is really cancerous in its nature. Again, we must bear in mind that quite a number of surgeons of great experience—men who have seen this disease in all its conditions and ravages—believe that the establishment of an artificial anus itself is a sufficient relief to the case. Dr. Thomas Bryant, of London, is not an advocate of excision, but is an advocate of an artificial anus and relieving the patient entirely of the necessity of using the diseased portion of the bowel for the transmission of fecal matter, and thereby allaying inflammation.

Again, we must remember that other operations are done besides excision of the rectum, which is a formidable operation and leaves disgusting results in many cases. Some other operations have been done which surgeons of experience believe to be efficacious; these are local in character—that is, the complete division of the mass backward towards the sacrum, in that way providing for the easy exit of the fecal matter. Of course, the era of operative procedure is upon us, and particularly is this operation advocated by European surgeons, and also very largely by American surgeons; but I think if all the cases were examined as carefully as those cases have been which Dr. McArthur has presented to us to-night, and discussed as coolly and calmly as he has discussed them, none of us would be very much in favor of promising a great deal for the operation.

Dr. Henry T. Byford.—I would like to emphasize what Dr. Parkes has said, that this is a palliative operation and not justifiable when it is immediately very dangerous to the life of the patient. The case related was very interesting to me, because it is similar to a case which I have treated, and which illustrates the principle which should be carried out in treating cancer of the rectum in women. In this case the sphincter was not involved, although the rectum from about two-and-a-half above down nearly to the sphincter was affected on its anterior and lateral aspect. I removed portions of the lateral and anterior rectal walls, and the posterior vaginal wall. Instead of drawing the parts together in front of the rectum, I operated upon the principle that all raw tissue not covered by mucous membrane will contract and obliterate the entire tract within it; so I endeavored to secure as large a surface of mucous membrane for the canal as possible by leaving the vagina open and merely closing up the vaginal entrance. There is another reason for removing, in cancer of the rectum, all of the rectum that we can, viz., that a return of the disease in connective tissue is not as painful as when it attacks the viscera. In this case the patient was able to evacuate the bowels until the entire pelvis was filled up with a mass of carcinomatous tissue, without very much pain. She died finally of exhaustion more than anything else. The point in all these cases is to get as much mucous membrane as possible, using the vagina the same as in any other operation.

Dr. L. L. McArthur, in closing the discussion, said: In presenting the patient this evening, I did not do so to advocate such an operation, although it does seem to me that, in cases in the female in which carcinoma occurs low down in the rectum, in reality it would be a procedure more advisable than to make an artificial anus at one side of the tip of the coccyx, because of the statement of the patient that she knew when the bowels desired to move. She had a peculiar feeling, she says, and has the power to expel the contents, thus escaping

the exceedingly distressing symptoms of involuntary discharges, which always occur with an artificial anus at other points. In regard to the statistics which I quoted as collected by Kelsey, in the article which he wrote on this subject for the "Reference Hand-book of Medical Sciences," published in 1886, he stated that the mortality from the operation of excision was thirty-three per cent. In Sajous' *Annual* for 1890, there is a collection of statistics after Kraske's operation, and the mortality is stated at fifty per cent. Kelsey happens also to be a contributor to this department of Sajous' *Annual*, so the mortality has rather increased than decreased for the last year, according to the same man's statistics. He bases this fifty per cent. mortality on seven cases done by Kraske himself, three by Schönborn, one by Rinne, and the remainder by Lauenstein, twelve in all, in which six died as the result of the operation; some by septic peritonitis (two), some by sepsis (two), and some from exhaustion.

As Dr. Parkes says, there are a large number of surgeons who advocate simply making a colostomy and interfering to no further extent with the case. In some excellent statistics collected by Cripps, we find that out of cases which he watched personally in London hospitals and studied carefully, life was lengthened on the average from seventeen months to twenty-two months—that is, there were five and a half months added to the longevity by simply making a colostomy; which shows that it is decidedly advantageous. Colostomy, I believe, will aid in lowering the mortality in cases of excision, whether done for pain or for obstruction. As to the operation being of dubious value, there is much to be said on both sides; there are, however, some well-recorded cases in which, the operation having been performed at an early day, the life of the patient has been preserved. One case was living in 1886 that had been living for seven years since the operation, and no return was to be seen, and five cases in which no return was seen in two years.

It has impressed me that some of the gynæcologists of the Society would comment upon the probability of endometritis with infection through the uterine canal and tubes as being very likely to occur in such a procedure, as was exhibited in my patient, and I would like to ask the President whether such an inflammation would be probable in a woman who had passed the menopause.

EDISON'S EXPLANATION OF THE AMPERE AND THE VOLT.

During a recent examination a lawyer put the following question to Thomas A. Edison:

"Explain what is meant by the number of volts in an electric current?" To which he replied:

"I will have to use the analogy of a waterfall to explain. Say we have a current of water and a turbine wheel. If I have a turbine wheel and allow a thousand gallons per second to fall from a height of one foot on the turbine, I get a certain power, we will say one horse power. Now the one foot of fall will represent one volt of pressure in electricity, and the thousand gallons will represent the ampere or the amount of current. We will call that one ampere. Thus we have a thousand gallons of water or one ampere falling one foot or one volt or under one volt of pressure, and the water working the turbine gives one horse power. If, now, we go a thousand feet high and take one gallon of water and let it fall on the turbine wheel, we will get the same power as we had before, namely, one horse power. We have got a thousand times less current or less water, and we will have a thousandth of an ampere in place of one ampere, and will have a thousand volts in place of one volt, and we will have a fall of water a thousand feet as against one foot. Now the fall of water, or the height from which it falls, is the pressure or volts in electricity, and the amount of water is the amperes. It will be seen that a thousand gallons a minute falling on a man from a heighth of only one foot would be no danger to the man, and that if we took one gallon and took it up a thousand feet and let it fall down it would crush him. So it is not the quantity or current of water that does the damage, but it is the velocity or the pressure that produces the effect."

It has been calculated that the electromotive force of a bolt of lightning is about 3,500,000 volts, the current about 14,000,000 amperes, and the time to be about $\frac{1}{1000}$ part of a second. In such a bolt there is an energy of 2,450,000,000 watts, or 3,284,182 h. p.—*Scientific American.*

GUNPOWDER STAINS OF THE FACE may be removed by painting with biniodide of ammonium, distilled water, equal parts; then with dilute hydrochloric acid, to reach the tissues more deeply affected.—*Revue de Therapeutique.*

THE
MEDICAL AND SURGICAL
REPORTER.

ISSUED EVERY SATURDAY.

EDWARD T. REICHERT, M. D.,
PROFESSOR OF PHYSIOLOGY, UNIVERSITY OF PENNA.,
EDITOR AND MANAGER.

N. E. Cor. 13th and Walnut Streets,
P. O. Box 843. Philadelphia, Pa

☞ SUGGESTIONS TO SUBSCRIBERS:
See that your address-label gives the date to which your subscription is paid.
In requesting a change of address, give the old address as well as the new one.
If your REPORTER does not reach you promptly and regularly, notify the publisher *at once*, so that the cause may be discovered and corrected.

☞ SUGGESTIONS TO CONTRIBUTORS AND CORRESPONDENTS.
Write in ink.
Write on one side of paper only.
Write on paper of the size usually used for letters.
Make as few paragraphs as possible. Punctuate carefully. Do not abbreviate or omit words like "the" and "a," or "an."
Make communications as short as possible.
NEVER ROLL A MANUSCRIPT! Try to get an envelope or wrapper which will fit it.
When it is desired to call our attention to something in a newspaper, mark the passage boldly with a colored pencil, and write on the wrapper "Marked copy." Unless this is done, newspapers are not looked at.
The Editor will be glad to get medical news, but it is important that brevity and actual interest shall characterize communications intended for publication.

Notice to Subscribers and Advertisers.

All bills owing the MEDICAL AND SURGICAL REPORTER, on May 1st, and after, must be paid to the present Editor and Manager.

THE PRESENT STATUS OF THE KOCH TREATMENT OF TUBERCULOSIS.

The absence of exact science in the medical knowledge of the day, has perhaps been nowhere so well exemplified as in the extreme readiness of both profession and laity to accept the unproved word of a single man in relation to a hitherto unanswered and weighty question in therapeusis—that of the existence of a specific control of the tubercular process. Nor is the precipitate haste on the part of the clinicians to condemn the method, as yet not even half tried, any more evidence of the development of stable principles in our methods of combatting disease processes. From a theoretical stand-point, excluding from present consideration the general care and management of the patient, the destruction, or modification of the materies morbi is to be accomplished in four probable ways, these include: the utilization of the antagonism of micro-organisms toward each other; the deleterious effect of micro-organismal products on the growth of micro-organisms; the unfavorable effects on micro-organisms of certain agents of mineral or organic origin; and the production of general surroundings unfavorable to the advance of the infection, both in the individual and in the community. To the second of these groups is to be referred the method recently proposed by Prof. Koch for combatting the tubercular process. This method, which is substantially if not precisely identical with the measures previously employed and announced by Dixon of this city, has for its underlying principle a fact, the verity of which may easily be recognized by analogy in numerous instances of the incompatibility of waste products with productive growths. Thus alcohol, as a product of vegetable activity manifested as fermentation, when present in proportions beyond 20 per cent., is sufficient to retard and eventually destroy the actions and vitality of the ferment. Nor is the use of the products of bacteria as a means of altering the further growth of bacteria in the animal tissues by any means a recent one, as may be noted in relation to the work done upon the bacillus pyocyaneus by Charrin and others. Separation of the fluid product of the growth of this last bacterium from the culture itself, by means of an unglazed porcelain filter, and inoculation with this sterile product has prevented the inception of pyocyanic disease in animals after subsequent inoculations with virulent matter. Probably the same principle underlies the Pasteur method of hydrophobic prevention; and

the field of preventive medicine glows with promise of great and near discoveries in this same line in other diseases.

The substance used by Koch in his experiments and more recently in the treatment of tuberculosis in man, and which, as already stated, is produced in practically the same manner by Dixon, is obtained from cultures of tubercle bacilli exposed to altered conditions of life by means of extraction with some such menstruum as glycerine. This material, from which no definite active agent has been eliminated by Koch, when brought into contact with tubercular growth in the animal economy, is announced to produce decided lowering of activity of growth and eventually, if in sufficient proportion, to permanently stop the morbid process. In the animal economy, further, as an evidence of its action, whether by direct action upon the germ, or by inducing deleterious changes in the tubercular tissues, there is manifested a febrile re-action; and as a result of its action it is stated that there is a destruction of the diseased structures and subsequently their replacement by cicatricial tissue. The exact mode of operation is not known, various theories having been offered in explanation.

Such was the knowledge established by the researches of Dixon and Koch, and eagerly seized upon by the entire world in the expectation of mastering tuberculosis. In the natural course of the rapid popularization of so important a discovery, the limits of its application have been wittingly as well as ignorantly widely overstepped; badly diagnosed cases and cases whose only cure can be death have been subjected to the vicissitudes of the treatment. With an eye singly to the result of the means upon the tuberculosis, cases have been permitted to approach the fatal termination because of the neglect of the true end, the recovery of the patient; and too often even the increased nutritive need of the weakened system has been passed by in the endeavor to overcome the process at fault. Clearly, in the method of action of the substance it was to be recognized that its only safe application could be found in the most localized forms, and preferably in foci where elimination of the products could be performed most thoroughly and with least severity to the organism; nevertheless, in the mad hurry, cases of advanced degrees of the disease and cases marked by generalization of the malady have been permitted the treatment, only to swell the death list which has been heaping discredit upon the measure. Where tubercular foci are numerous and widely distributed, if each focus is to be the scene of rapid necrotic processes, each followed by a local focus of reactive inflammation, what is to be expected but the effects of an intense toxæmia and fever, which are the necessary attendants of such a condition?

Where the lungs are riddled with the tubercular changes of late chronic phthisis, what is to be expected if this new therapeutic agent accomplish the best possible results, and yet leave a great mass of cicatricial tissue to block up and hamper the pulmonary tissue? Moreover, what of that great mass of patients, from whom, the treatment having failed to produce notable external changes, the lymph was withdrawn and death followed—are there positive evidences of no palpable changes in the internal tubercular localities in the line of change indicated? How is it possible from post-mortem appearances to affirm absolutely the generalization of the tubercular process in this or that position, within a definite and brief period? These are the considerations upon which more information and more definite knowledge should be demanded from those who condemn the method. Its action upon true cases of lupus has been too decisive to permit, in other localized forms of tuberculosis, any discredit until more exact information is had. The conflict of reports is too great at the present date and the tendency of medical opinion too observant of so-called policy to allow an absolute decision; this will and can only come when the lymph method has fallen entirely out of injudicious hands and is left to the investigation of the cautious and thoroughly interested.

There are other phases of the subject, too, which cannot fail to attract attention in the future. How much of the severity of the reactions, and how much the failure in results may be due to the presence of substances other than the essential toxalbumen in the lymph? What auxiliary measures are those best adapted to the furtherance of the favorable results of treatment? Finally, if even in mild cases of pulmonary tuberculosis failure should be established, there is one other point of the utmost importance to be further examined. In the earliest paper of Dixon (Med. News, Nov., '89), antedating Koch's announcement by more than a year, there were distinct expressions of the development of immunity in animal tissues against the tubercular process by this general method; and investigations carried on in rabbits and guinea pigs have with considerable uniformity confirmed this hypothesis. It is undoubtedly an injudicious act to inoculate healthy individuals with an agent of which so little is known as this mixture of the retrograde products of tubercle bacilli, but it has been and doubtless will be done more or less frequently for a time. There are no positive arguments in relation to tuberculosis refuting the usual rule of infections to protect against themselves; and there do occur occasional cases whose clinical histories present features not averse to this view. For example, within the knowledge of the writer, a young man of questionable family history, who for 20 years had had a destructive scrofuloderm only cured within the past few years, became accidentally inoculated with tuberculosis, while performing an autopsy upon a tubercular body. To ordinary observation, the usual course of inoculated tuberculosis was manifested, the healing of the original wound, the period of some days' quiescence, the formation of a nodule at the site of sore, and the breaking down of the surface into a slightly purulent fluid to the formation of a tubercular ulcer. Within more than a month no lymphatic involvement had become manifest, and the local node was removed by operation. Thus far, nearly five months, there is no evidence of general infection. Such cases have occurred before and the process remained for a long time localized—yet may not the previous tubercular condition as manifested by the existence of scrofula, have exerted some limiting influence upon the inoculated process? The existence in otherwise normal lungs of isolated and calcified nodes of old tubercular processes may suggest the protective value of the results of the prior disease; and where these are associated with evidences of general advancement of the process there enters the question of whether there had not been at least a temporary protection analogous to that afforded by vaccination.

This then is the status of the proposition. The statements denying value to the treatment of tuberculosis by the method of Koch, whose claim to consideration rests upon what appear to be general laws, and is corroborated by laboratory researches, lose their own force from the numerous faults of omission and commission met in the widespread and ignorant application of the method. Even should it fail as a curative, except in the localized and superficial variety known as lupus, there is yet another field for its usefulness open to investigation, its possible preventive power.

Dr. J. T. Rothrock, Prof. of Botany, in the University of Pennsylvania, has sent out his vacation circular for the fourth season.

The Doctor's plan is to take charge of lads who are below par physically, but who need moderate, systematic exercise in the open air, good food, and early hours, rather than medicine. The plan includes sailing on one of the safest of vessels, deep-sea fishing, football, lawn-tennis, target practice, etc. At night instruction is given on methods of prompt action in an emergency—"until the doctor comes."

Thus far the Professor asserts there have been nothing but good results from this novel plan.

Dr. Rothrock is a gentleman of experience, a physician, explorer and teacher. Parents may trust their sons in his hands with

the assurance that they will be conscientiously and wisely cared for.

OBITUARY.

DR. JOSEPH LEIDY.

On April 30th, after a brief illness, passed away, Dr. Joseph Leidy, Professor of Anatomy and Zoology in the University of Pennsylvania,——the most distinguished naturalist of America, a man whose lasting achievements secured the highest recognition throughout the entire scientific world, whose personal characteristics won the warmest affection of all who had the privilege of his friendship.

Joseph Leidy was born in Philadelphia, Sept. 9th, 1823. His inclination towards the study of natural history was early manifested, when, as a school boy, he secured text-books and began the study of mineralogy and botany, thereby laying the foundation of that immense store of knowledge, which his unaided efforts and ceaseless industry made his own. As a youth, he also displayed a remarkable facility for drawing, a talent which, in after years, rendered his scientific contributions conspicuous.

After several experiences, it was determined that he should adopt a profession, in which his devotion to the natural sciences—becoming ever more pronounced—would find opportunities for congenial employment; he, therefore, in 1840, entered upon the study of medicine, under the guidance of Drs. James McClintock and Paul B. Goddard, graduating from the Medical Department of the University of Pennsylvania in 1844. His thesis was an admirable essay on the "Comparative Anatomy of the Eye of Vertebrated Animals."

During the years of his medical course, his favorite studies in the domain of more purely scientific biology were by no means neglected, for in the same year of his graduation, he contributed a brilliant chapter on the "Special Anatomy of the Terrestrial Molusks of the United States" to Binney's monograph.

Immediately after receiving his degree, he became assistant to Prof. Hare, the distinguished occupant of the chair of Chemistry in the University of Pennsylvania at that time, thus already indicating the broadness of his scientific interests. In 1845, Dr. Leidy was appointed Prosector in Anatomy, thus beginning the services in the anatomical department of the University, which, with a slight interruption during the succeeding year when he was demonstrator in the Franklin Medical College, have terminated only with his death. As Horner's successor, Dr. Leidy became, in May, 1853, professor of Anatomy in the University of Pennsylvania, to which chair that of Zoology and Comparative Anatomy was added a few years ago. In 1871, he became, likewise, professor of Natural History in Swarthmore College.

Three years after his graduation, "The Fossil Horse of America" appeared, the first of those paleontological contributions which were to make Leidy's name known in all lands. The most important of these have been:

Ancient Fauna of Nebraska. 1853.

Memoir on the Extinct Sloth Tribe of North America. 1855.

Cretaceous Reptiles of the United States. 1865.

Extinct Mammalian Fauna of Dakota and Nebraska: together with a Synopsis of the Mammalian Remains of North America. 1869.

Contributions to the Extinct Vertebrate Fauna of the Western Territories. 1873.

Description of Vertebrate Remains from the Phosphate Beds of South Carolina. 1877.

The preparations of these monumental works, however, by no means exhausted the industry of this indefatigable worker, for his additional contributions during these same years were numerous and varied.

Among the first in this country to use the microscope as an instrument of scientific research, Prof. Leidy always delighted in studying the minute forms of life and the details of structure it alone revealed. Early

in his career, his classic paper on "Researches on the Comparative Structure of the Liver," (1848) and other kindred contributions established his ability as an histologist.

The study of parasites also became a favorite field with this investigator, whose numerous discoveries, as recorded in the Proceedings of the Academy of Natural Sciences of Philadelphia, bear testimony to the success with which his labors were attended. It is interesting to note that, in 1846, Dr. Leidy recorded the discovery of a species of trichina in the hog, and stated that it appeared to be identical with the trichina spiralis, which he had met with in the tissues of the human subject; later, this observation materially aided Leuckart in unravelling the relation between the parasite in man and in the hog. The appearance, in 1853, of the beautifully illustrated monograph, "Flora and Fauna within Living Animals," added a contribution of permanent value to the literature pertaining to microscopic parasites, to which its author subsequently made so many important additions.

The fondness for the study of the lowest forms of life, which had always been a source of never failing pleasure and recreation from the fatigues of more burdensome duties, led Dr. Leidy to undertake a systematic investigation of the forms found in this country. The results of this research appeared in the quarto volume, "The Fresh-water Rhizopods of North America", the splendid illustrations of which are the delight of every student. These plates, charming as they are, in many instances fall far short in reproducing the exquisite beauty of the original drawings from Leidy's skillful pencil and brush.

As teacher of anatomy in a great medical school—in which capacity not a few readers of the REPORTER have profited by his learning, during the thirty-eight years that have elapsed since his accession to the chair—Dr. Leidy appreciated the burden imposed on the student by the useless complexity of nomenclature, as well as by the perpetuation of errors grown classic by the sanction of precedent. He, therefore, set about the preparation of a text-book which should describe the human body as he saw it, freed, as far as possible, from all cumbersome terms; in 1861 was published "An Elementary Text-book on Human Anatomy," which for clearness and accuracy of description has never been surpassed; the second edition of the book (1890) even more fully justifies its favorable reception.

Some idea of the achievements of this life of ceaseless industry and untiring devotion to investigation may be had, when it is learned that the published communications, of all kinds, number about one thousand. While Prof. Leidy's eminence as a great naturalist has been cheerfully accorded at home, foreign countries have not been tardy in expressing their appreciation of the valuable services he has rendered in the advancement of those fields in which he has labored, since the honors conferred upon him by learned bodies abroad, include honorary membership in almost all the foreign societies of note devoted to the natural sciences.

The peer of the greatest, Leidy, together with such men as Owen and Huxley, Johann Müller and Agassiz, Koelliker and Henle, represented a generation of scientists almost past away—men, whose privilege it was to be of the van-guard of Biology, to live in those golden days when, on every side, new discoveries rewarded the scrutiny of the keen investigators, whose minds, already richly stored by broad training, became the repository of an ever-widening insight into natural phenomena. Men, whose energies were engaged in mapping out the salient landmarks of their science, whose comprehensive field was all nature, and on whom the limitations of an age of specialties had not been exerted.

Great as our admiration and respect for the splendid scientific attainments of Dr. Leidy must always be, it was, however, the personality of the man that drew towards him the warmest regard of all who came within his influence. Who that learned to know him—majestic in his noble simplicity,

unassuming in his greatness, approachable by all seeking knowledge, to whom the youngest student turned assured of a kindly reception, a patient ear, and sound advice; ever the last to allude to his own achievements, but fearlessly expressing his own honest beliefs when occasion demanded, devoting to science his entire life, not for his personal glory, but for the advancement of knowledge—could not fail to honor the man truly great and good! A nature to which petty jealousy and conventional circumlocution were alike unknown. A man whose tender heart and quick sympathies were overruled alone by his sense of duty, and by his absolute, unwavering devotion to the truth.

G. A. P.

CORRESPONDENCE.

Dr. S. E. Young of Midland, Ga., writes:

Please inform me, (1.) Whether females experience an orgasm in sexual intercourse, similar to that experienced by males.

(2.) Give the philosophy of such orgasm.

(3.) You will also oblige me by stating whether women who are pregnant have any sexual propensities.

(4.) Advise me as to the probable procreative powers of a man who has twice had double gonorrhœal epididymitis, each epididymis being left somewhat nodular.

(5.) How can seminal fluid find its way into the receptaculum seminalis when the calibre of each vas deferens has been obliterated by adhesive inflammation?

[(1.) As far as our information goes the orgasms in the two sexes are essentially identical.

(2.) Not knowing the philosophy of the operations in the nerve cells we cannot explain.

(3.) Yes, as a rule, but in abeyance.

(4.) Practically *nil*.

(5.) Of course, if the vasa deferens are obliterated, the seminal fluid could not find its way into the receptaculum save by burrowing through the tissues, which is highly improbable.—Ed.]

PERISCOPE.

THERAPEUTICS.

THE USES OF NITRATE OF SILVER AND SULPHATE OF COPPER IN OPHTHALMOLOGY.

Grandclement (*Lyon Médical*, March 8, 1891) carefully reviews the principal remedies used locally in eye affections, with especial reference to the sulphate of copper and the nitrate of silver.

He considers the copper salt one of the best agents in the treatment of granular ophthalmias, applied either in solution or in the solid form. The cauterizations are painful even after the previous use of cocaine. It, however, is one of the most serviceable remedies in all the superficial inflammations of the eye. The *divine* or blue stone is said to be composed of equal parts of copper, alum, and nitrate of potassium.

The nitrate of silver is extremely dangerous in ulcerations of the cornea, as it is very apt to form, in such cases, disagreeable incrustations of chloride and albuminate of silver. In the treatment of purulent ophthalmia the author has been in the habit of cauterizing the conjunctiva every twelve hours, neutralizing the strong action of the salt with a little salt-water applied by means of a soft brush. Endeavors should always be made to protect the cornea from the action of the silver nitrate. The solution of this salt should be freshly made and placed in a black bottle, otherwise it will decompose into the oxide of silver and nitric acid, this producing deep eschars upon the conjunction. In spite of these incoveniences, however, nitrate of silver is the best germicide, so far, in the treatment of purulent ophthalmia. The author has obtained rapid and beneficial results in the treatment of crescentic and sloughing ulcers of the cornea by means of a finely pointed stick of nitrate of silver, being careful not to touch the borders of the ulcers.

THE INFLUENCE OF WARM ENEMATA IN THE TREATMENT OF TYPHUS FEVER.

From a study of the subject, T. K. Geisler (*Æsterr ungar Centrablatt*, Feb'y, 1891), draws the following interesting conclusions: 1. Immediately after the injection the temperature of the whole body is somewhat raised (maximum 0. 2.° C). 2. Warm enemata exercise a favorable influence upon the intestines, as they diminish the number and

quantity of excreted matters retained in them. 3. The injections provoke a rapid fall of temperature and transform a continued fever into a remittent and intermittent disorder. 4. After the administration of the warm enemata, the pulse immediately becomes diminished in frequency, but it returns to its original rate in about an hour. The pulse in general is very hard and full and the cardiac contraction very strong; the dicrotism is little influenced. 5. The respiration, soon after the injections, is generally hurried. An hour afterwards, it begins to get slower. 6. The blood pressure is increased by warm enemata. 7. Under the injections the quantity of urine is increased, and its specific gravity diminished. 8. The cutaneous and pulmonary exudations are diminished.

UNTOWARD EFFECTS OF EXALGINE.

A case of poisoning by exalgine is reported by Buisson (*Bull. Génér. de Therap.*, March 15, 1891). A man, 60 years of age, suffering from influenza, accompanied with gastric disturbance, was ordered antipyrine but was given by mistake thirty grains of exalgine, which he took in the course of three hours. A similar amount was injected on the following morning. Symptoms of vertigo, with extreme dyspnœa and pronounced cyanosis were experienced soon afterwards, and lasted for two days. The patient recovered.

ARISTOL IN VENEREAL DISEASES.

Vincenzo Fisichella (*Riforma Medica*, 1891, p. 238) has tried aristol in the treatment of simple and syphilitic chancres, buboes, mucous and gummous patches, and has arrived at the following conclusions: 1. In simple or syphilitic chancres aristol produces after a certain time a drying up of the ulcer. 2. In phagedenic lesions the drug is of some use but does not produce a curative action. 3. Compared with iodoform, it is less efficacious, and can only be preferred on account of its odorless properties. 4. It is easily pulverized and it adheres well. The author does not believe that aristol is destined to be of much use as a remedy for the treatment of syphilitic disorders.

NEW METHODS OF TREATMENT IN TYPHOID FEVER.

Dujardin-Beaumetz (*Bulletin Gén. de Thérapeut.*, December 30, 1890) studies prophylaxis of typhoid fever, and the use of intestinal antiseptics, cold baths and diuresis in the treatment of the disease.

Prophylaxis has been more benefited than has treatment by the discovery of the bacillus of Eberth. To purify water, boiling or sterilization is better than filtration. Rigorous care of typhoid patients is insisted upon; a strong solution of sulphate of copper, twelve and a half drachms to the quart, is recommended for washing sheets, water closets, etc.; a weaker solution, three drachms to the quart, is used to disinfect the nurse's hands and those portions of patient soiled by ejecta. In studying intestinal antisepsis, introduced by Bouchard, salol is preferable to iodoform, naphthaline, naphthol, etc., since it is less harmful and more efficient. Thirty to sixty grains may be given in twenty-four hours, in combination with salicylate of bismuth, if this drug is indicated.

Dujardin-Beaumetz does not regard hyperpyrexia as a part of the general condition of the disease, believing that typhoid fever can be serious without hyperpyrexia or that the temperature can be kept normal by antipyretics without decreasing the severity of the disease. He believes that antipyretic drugs decrease urinary secretion and retard elimination of the poisons produced. He finds that in sponging, enveloping in wet sheets and tepid baths, he has all the advantages of cold baths without their inconveniences. By a tepid bath he means one with a temperature of 86° to 89.6° F., making it about eighteen degrees below the patient's temperature; with these baths sedation of nervous phenomena is obtained, together with sufficient lowering of the temperature. Opposing Brand's systemization, he treats cases symptomatically; beginning with sponging, he gives tepid baths, if the temperature passes 104° F., one or two a day, lasting twenty to thirty minutes. Stimulating drinks are given patients, if needed, while in the bath. If ataxo-adymania becomes excessive, wet-packing is used instead; this pack is not continued for more than thirty seconds.

Sulphate of quinine is regarded as the drug best able to meet the general indications of typhoid, not more than fifteen grains a day being given. He does not believe that the benzoate of soda recommended by Robins increases the elimination of waste products; believing the kidneys are the best agents he gives abundant drinks, preferably lemonade made with wine, to favor diuresis.

He calls attention to the remarkable paper of Brouardel, showing the great in-

fluence of typhoid mortality on depopulation in France, the mortality in women being twice as great as in men. In studying the influence of the treatment on mortality, he finds that the difference under the various methods is trifling; in 1889, under symptomatic treatment, there was a mortality in the hospitals of Paris of 11.33 in a hundred; by systematized treatment with cold baths, the mortality was 11.28 in a hundred. The lowest mortality for the year, 7.33 in a hundred, was obtained by the combined use of quinine and tepid baths.

Debove has shown that prudence is necessary in reaching therapeutic conclusions from the study of statistics, for by the purely expectant plan without hygienic treatment, he had a mortality the same year, at the Andral Hospital, of 9.2 in a hundred. Beaumetz believes that this success rested largely on the diuresis obtained by Debove. —*University Medical Magazine.*

CARPAINE.

A new alkaloid has recently been detected in papaw-leaves by M. Greshoff, of the Chemico-Pharmacological Laboratory at Buitenzorg, in Java. It was obtained by digesting the powdered leaves in spirit acidulated with acetic acid, removing the spirit by distillation, and treating the resulting extract with water so as to leave behind resin and chlorophyll. The aqueous solution was then shaken repeatedly with ether, and carbonate of sodium was added until an alkaline reaction was evident, The precipitate thus obtained was readily soluble in ether, and on evaporation of the ether the "carpaine" was obtained in colorless rosettes of crystals to the extent of about .25 per cent. of the leaves employed. Although the freshly-precipitated alkaloid is readily soluble in ether, when once crystallized it redissolves but slowly, so that the crystals can be purified and rendered perfectly white by washing with a little ether, but the percentage obtained is thus reduced to .15 per cent. On a large scale, the lime and petroleum method gives very good results, about .19 per cent., and would probably be preferred on the score of expense. Comparative experiments made on the young and old leaves, freed from the stalks, show that the old leaves afford when dried .072 per cent. of the alkaloid, and the young leaves .25 per cent., and that, on an average, a papaw plant can be calculated to afford thirty grammes of the alkaloid per year from the leaves. The hydrochlorate of carpaine, which contains about eighty-two per cent. of the pure alkaloid, is freely soluble in water. As yet, comparatively little is known of the physiological actions of the alkaloid. It appears, however, to act more especially upon the heart, slowing its action. The lethal dose for a fowl of five hundred grammes (one pound) weight was found to be about 200 milligrammes (three grains). In a fowl of three hundred and fifty grammes weight, no poisonous symptoms were produced with 50 milligrammes of the alkaloid; with 100 milligrammes, symptoms of poisoning occurred in ten minutes after injection into the breast muscles, but after twenty-five minutes the animal recovered its normal condition. The bird lay on its side, and breathed deeply in a jerky manner, and showed slight convulsive movements of the whole body, but no irritability was noticed. Further observations are necessary to determine the usefulness or otherwise of the alkaloid in medicine. Should it prove of utility, there can be no difficulty in obtaining it in almost unlimited quantity and in a definite crystalline condition. The alkaloid is easily precipitated from its solutions by the alkaloid reagents. The most delicate reaction is with Mayer's reagent,—iodo-iodide of potassium,—which, in a solution of 1 in 300,000, gives a turbidity, and in 80,000 parts an evident precipitate; phosphomolybdate of ammonium has its limit of reaction at 1 in 75,000 parts, picric acid at 1 in 30,000, and chloride of gold at 1 in 25,000. The alkaloid has a bitter taste, which is perceptible even in a solution of 1 part in 100,000.—*Pharmaceutical Journal and Transactions*, December 27, 1890.

CASES OF POISONING BY BROMOFORM.

Bromoform has been recommended by numerous observers, in the strongest terms, as a remedy in whooping-cough, but Dr. Nauwelaers (*Revue Mensuelle des Maladies de l'Enfance*, February, 1891) reports a case of poisoning in a child, aged 1 year and 3 months, suffering from whooping-cough, by 2 drops of a solution of 7 drachms to ℥ of bromoform, dissolved in an equal amount of alcohol, and given eight times daily.

The symptoms produced were profound stupor, paleness, coldness, complete muscular relaxation, tracheal rales, feebleness of respiration and circulation, contraction and immobility of the pupil, and insensibility of the cornea. The case proved fatal, and at the autopsy there was found slight congestion of the brain, marked injection of the

stomach and duodenum, and great increase in bronchial secretions.

In the *Provincial Medical Journal* for February 2, 1891, is a second case reported by Dr. E. Sachs, of a 4-year old child, in whom 3 drops of bromoform were ordered three times a day. In the absence of the mother, the child—doubtless tempted by the sweet taste of the mixture—got at the bottle, and drank what remained in it,—that is, about 15 minims of bromoform. Some time after, the child suddenly turned pale, and, staggering about, was put to bed. When seen by Dr. Sachs it was lying in a seemingly lifeless condition, with fixed dilated pupils, cyanotic lips, imperceptible pulse, and cold extremities. Injections of ether (Pravaz's syringefuls) and the application of a stream of cold water to the chest and back, soon brought the little patient back to consciousness, and the next day it had entirely recovered.—*Therapeutic Gazette.*

A NEW METHOD OF ADMINISTERING DIGATILINE.

A new method for the administration of dangerous drugs has been proposed by Petit (*Rev. Gener. de Clin. et de Therap.*, March 11, 1891). It consists in the preparation of a solution to serve as a vehicle, this being especially recommended for the administration of crystallized digitaline. It is made as follows:

℞

Glycerine	133 grammes.
Distilled water	147 grammes.
Alchohol 95%	q. s. to make a litre.

Every cubic centimetre of this solution represents 50 drops, so that the remedy may be administered in doses of $\frac{1}{50}$ of a milligramme. For example, digitaline could be ordered in the following manner:

℞

Crystallized digitaline . . .	1 gramme.
Glycerine-alcoholic solution	q. s. to make a litre.

One drop of this solution is equal to $\frac{1}{50}$ of a milligramme of the active principle.

This method of administration presents several advantages. The solution or vehicle is somewhat viscid and consequently does not evaporate easily; it is stable and keeps for a long time.

THE LOCAL ANÆSTHETIC ACTION OF STROPHANTHINE AND OUABAINE.

Panas (*Archives d' Ophthalmologie*, March-April, 1890) draws the following conclusions from his clinical observations: 1. Ouabaine acts as an anæsthetic in the rabbit's conjunctiva, but has apparently no such effect in the human eye. 2. Strophanthine, though superior to ouabaine in anæsthetic properties, is so irritating in its effects on the human eye that it can not take the place of cocaine.

OIL OF PEPPERMINT IN THE TREATMENT OF "GRIP."

Dr. Charles L. Hogeboom, has had much greater success in treating grip when using full doses of oil of peppermint in addition to quinine, and full doses of bicarbonate of soda, than without it. He gives from five to ten drops three times a day, and sometimes more, till the worst symptoms subside. The disease may be assumed as microbic, although the germ has not been discovered. It is probably many times smaller than the typhoid bacillus, and, in consequence, may never be found.

The history of grip indicates a germ origin. It resembles, in many characteristics, other well-known germ diseases. He believes oil of peppermint to be a grip germicide. It acts with the greatest promptness and speedily dispels the most alarming symptoms, at least as far as my experience goes. The oil of peppermint is a powerful stimulant to the nervous system, particularly the vaso-motor, promoting regularity and decreased rapidity of the pulse, and relieving local congestion. It is the most diffusive of all the essential oils. These remarks are sufficient as hints to all practitioners who may care to make a trial of the remedy.—*Med. Rec.*

NITRITE OF AMYL IN CHLOROFORM POISONING.

Dr. E. Mammen, adds another case of chloroform poisoning treated successfully by the inhalation of nitrite of amyl. The facts are as follows: At about 7 P.M., Dr. M. received a message to come hastily to M. P——, who had taken chloroform and could not be awakened. The distance was about one and a half miles, and he stopped at a drug store to procure five-drop pearls of nitrite of amyl. Time of arrival was about half an hour after being called. He found the patient in a profound stupor, respirations shallow, pulse rapid and feeble. A three ounce bottle was found in his coat pocket, half full of Squib's chloroform. A telephone message to the druggist revealed the fact that he had purchased three ounces of the drug some two hours before. He had

swallowed apparently about one and a half ounce. Air was at once freely admitted to the room and to the patient, and a pearl of the nitrite given by inhalation. The effect was immediate and apparent. After the lapse of fifteen minutes, pulse again became rapid and feeble, and another pearl was used, with the result of deepening the respirations and increasing the vigor of the pulse. The same thing was repeated at lengthening intervals eight or nine times. Meanwhile, hypodermic injections of atropia were twice given, and towels wrung out of cold water dashed upon the chest. After four hours the patient awoke from his stupor, and in another hour was out of danger. Recovery was somewhat slow, owing no doubt partly to the great destruction of red blood-corpuscles, as evidenced by the extreme icteric hue of the skin, which persisted for two weeks. In my judgment this patient could not possibly have survived without the use of nitrite of amyl.—*Med. Rec.*

TREATMENT OF SWEATING FEET.

Dr. I. N. Bloom, at a meeting of the Clin. Soc. of Louisville, said that in a recent case, he had the patient bathe the feet in a solution of bichloride of mercury, 1 to 1000, morning and evening. After rubbing the surface carefully, so as to remove the dead epidermis macerated by the sweat, he directed the following course, which is partly original: A plaster sole, partly soaked in a bichloride solution, 1 to 1000, was put in the shoe. After drying the sole and placing it in the shoe, he sprinkled it with powdered boric acid. As regards the advantage of this method of treatment, there is much diversity of opinion. In this case the result was quite satisfactory. If this treatment were uniformly successful, it would point to a micro-organismic origin for the disease rather than a neurological. His experience has been too short to determine, but in many cases, especially of the lighter forms, it is of nervous origin. It is much easier to cure simple hyperidrosis of the feet than of the hands. Hebra's method, with diachylon ointment, is the only one promising any hope of success. He has tried many other means recommended by worthy men, but always had to return to the diachylon. The inconvenience of this latter method is great, but patients bear any treatment that will help to get rid of the disagreeable disease. This is especially true of women.

COCAINE IN SMALL-POX.

Drs. Luton and Ory recommend highly the internal use of cocaine in the treatment of variola, having tried it during a severe epidemic that raged in Algiers, in November, 1889. The good effect of the remedy was shown almost immediately by a lightening of the color of the eruption and disappearance of many of the papules without becoming purulent. Even in those cases in which the papules persisted for some time there was no suppuration. One of the cases in which the remedy was tried was one of black small-pox, from which the patient recovered. The cocaine was exhibited in a five per cent. solution, of which from ten to twenty drops were given every six hours. As no pustules were formed, there was no pitting.—*Med. Rec.*

MEDICINE.

THE WHITE CORPUSCLES IN DISEASE.

A very interesting communication upon this subject, by CASTELLINO, appears in the *Gazetta degli Ospitalli*, No. 4, 1891. The author has studied the matter for a period of three years, on over a hundred patients and his researches were made in a laboratory of Genoa. The following conclusions are put forth: 1. Along with the destruction of the red cells of the blood, there is an increase in the white globules in the following diseases, which are arranged in the degree of the number of said leucocytes: Pneumonia, erysipelas, scarlatina, pleurisy and typhoid fever. 2. These leucocytes rise in number with the temperature, and, except in the cases of erysipelas and pneumonia, begin to diminish *pari-passu* with the decline of the fever. 3. In these last two cases the white cells only begin to diminish several days after the crisis is over. 4. In acute infections there is a predominance of small white globules which are finely granular with one nucleus (the leucoblasts of Löwit). 5. In leuchæmia and chronic infectious diseases, such as syphilis, malaria and lead-poisoning, there is a predominance of the large leucocytes with coarse granulations, having many nuclei without nucleoli (erythroblasts of Löwit). Many of these granules answer to the chemical and microscopical tests of fatty substances.

A CASE OF ECHINOCOCCUS OF THE LUNG.

An interesting case of echinococcus in the upper lobe of the right lung, in a girl, aged 16 years, and of a family history of phthisis,

is reported by L. Revilloid (*Rev. Med. de la Suisse Romande*, Feb'y 20, 1891). The girl had always been delicate, having suffered from pleurisy when she was three years of age; when eight years old she had whooping cough, and shortly afterwards an area of dullness over the upper lobe of the right lung appeared and was diagnosed as tuberculous. The best hygienic measures were used in treating the patient, but notwithstanding these precautions, the dullness continued to spread until amphoric breathing appeared over the whole area of dullness in front and behind. Once, when apparently enjoying fair health, the patient was suddenly seized with suffocation and uncontrollable cough, which was followed by expectoration of large quantities of white viscid fluid. The expectoration continued for three-quarters of an hour and was followed by violent vomiting. The patient became very ill; the face and extremities were cold and blue, and collapse set in. On recovery from this, the temperature went up and the pulse increased to 130. The expectoration continued and the nausea was so great that no food could be retained in the stomach. Rectal alimentation was employed. Two days afterwards rigors, with cold perspiration, came on and the expectorated matters exhibited an excessive fœtor. Then over the area of dullness, physical exploration showed the presence of a cavity; amphoric breath sounds, râles and crepitation were marked. The patient, however, in such condition, did not present the aspect of a consumptive person, and the rare smell of the sputum was that of sulphuretted hydrogen. In the sputum, through microscopical examination, were found organisms in the form of hooklets, but no traces of tubercule bacilli. The diagnosis was clearly made then. In the course of time, all signs of the infectious disease disappeared and the patient made a final recovery. The treatment consisted of the administration of deodorants and the regulation of the patient's posture in order to insure the evacuation of the cavity. It was afterwards ascertained that the girl, when a child, associated largely with pet dogs, known to be suffering from tænia, and thus the presence of the echinococcus in the patient was explained. About nine months later the subject of this case was enjoying apparently the best of health, no symptoms of tuberculosis having been observed.

Eleven physicians have each found a better "lymph" than that of Koch.

THE VISUAL DISTURBANCES IN TABES DORSALIS; AN ATTEMPT AT A COMPREHENSIVE EXPLANATION OF THE SYMPTOM-COMPLEX OF TABES.

Berger (*Arch. of Ophthalmology*, xix, 4) has here presented a very interesting paper. He finds that tabes occurring in the earliest and latest periods of life are free from severe complications. Tabes in syphilitic cases generally begins with cerebral symptoms and in non-syphilitic cases with spinal symptoms. Slight drooping of the upper lid increases from the beginning of the tabes up to the paralytic stage. When the lids of a tabetic patient are closed after a few seconds, fibrillar twitching is seen in the orbicular muscle of the lid. There is no marked difference in the relative frequency of inequality of the pupils in the different stages of tabes; it is slightly more frequent in the initial stages. A trace of pupillary reaction to light may be preserved for a long time, and this reaction disappears undoubtedly earlier than the reaction to irritation of the skin. Berger accepts Mauthner's explanation of the immobility of the pupil in tabes—that the fibres of the pupillary light reflex, lying in the wall of the third ventricle, suffer from a chronic ependymitis and a consequent sclerosis. Paralysis of accommodation becomes the more frequent the more advanced is the disease. As a rule, paralyses of the exterior ocular muscles are found disproportionately oftener in cases showing optic atrophy than in cases not thus complicated. Between the cases of optic atrophy with paralyses of the ocular muscles and those without such complications there is no special difference as regards the duration of the affection before blindness ensues. Most of the optic atrophies develop in the pre-ataxic stage; but should such atrophy develop later, blindness will follow the sooner the more advanced is the tabes. No relation exists between the contraction of the visual field, the color-fields, the disturbances of central vision, and of color-perception in tabes. Contraction of the outer portion of the visual field is most frequent, though it may occur in its upper portion. Syphilitic patients show a greater tendency to permanent paralyses of the ocular muscles than non-syphilitic patients, owing to the fact that they are more subject to multiple paralyses. Berger draws the following conclusions: Many of the symptoms of tabes may be explained by a lesion of the nerve nuclei in the fossa rhomboidalis and its continuation into the aqueduct of Sylvius. The dif-

ficult closure of the lids may be explained by a slight functional disturbance of the upper nucleus of the facial nerve. The myosis is paralytic, caused by paralysis of the vaso-constrictors in the medulla. The reflex iridoplegia is caused by a legion of the fibres running in the wall of the third ventricle to the nucleus of the sphincter pupillæ. The diminished intra-ocular tension sometimes found is the result of the lowering of the tone of the vessels. The lacrymation in tabetic patients is a vaso-motor neurosis. The sympathetic nerve is not the cause, but the medium by which certain ocular symptoms of tabes are carried from the central nervous system to the eye. In tabes it may be said in general that the nerve nuclei in the medulla nearest the median line suffer more frequently than those farther outward. An affection of the medulla is indicated by the development of diabetes mellitus in tabes, and in this manner may, perhaps, be explained the febrile symptoms which are sometimes met with in tabes. It is unnecessary to assume the existence of hæmorrhages in the central fibres and in the nuclei in order to explain the transitory paralyses of the ocular muscles which come on in the beginning of tabes. We know that the antero-lateral tract, which connects the degeneration zones of the medulla with those of the cord, contains vaso-motor fibers, and it has been proved that the lesions of the cord, especially in tabes, correspond in extent to the vasculas zones. It may be concluded from the functional disturbances of the optic nerve that vascular changes alone cause the disturbances, and the assumption is admissible that the functional disturbances of the vascular regions of the optic nerve and posterior columns of the cord are caused by a disease of the nerve centers in the fossa rhomboidalis, resulting from an ependymitis of the medulla.

Berger's experimental investigations, in which he cut different parts of the medulla, shows that: 1. Nystagmus may develop. 2. Mydriasis as well as myosis may appear. 3. As a result of injury to the medulla, hæmorrhages are found in particular vascular regions of the cord. 4. After injury to the medulla, changes in the retinal vessels may come on.—*N. Y. Med. Jour.*

REFLEX PAIN IN REMOTE REGIONS AN EVIDENCE OF INTERNAL HEMORRHAGE.

In 1880, a German, aged fifty-nine, while engaged in playing chess with Dr. H. Engel complained of an excruciating pain in his left knee, which had developed a few hours before and gradually became more intense. He had never suffered with rheumatism or neuralgia of any kind, never met with any injury, and never felt any pain in that knee. An examination gave no result; there was neither redness, swelling, nor tenderness. He went home promising to use certain anodynes as directed by me. Late in the night Dr. E. was sent for, the pain not having diminished. A hypodermic of morph. sulph., one sixth grain, gave no relief, and it was followed fifteen minutes later by a second injection of one-fourth of a grain, and the pain became less severe. The next day the pain remained about the same; he refused another hypodermic, and a blister applied at 11 A.M. Otherwise his health was undisturbed, there being no symptom or sign of any other morbid condition. Dr. E. was informed later, that the pain subsided somewhat about five o'clock in the afternoon, probably from the effect of the blister still covering the spot. A few minutes before 6 P.M. the pain again became suddenly intense; he expressed a desire to use the commode, and while sitting upon it he was seen to fall forward. An immense hemorrhage, extending over the entire base of the brain, had caused the fatal issue before Dr. E. reached him an hour later.

An Israelite, aged sixty-three, remarkably active and healthy-looking, while visiting, on the afternoon of December 14, 1884, a lady with whom he had been very intimate for years, complained of a severe pain in the left leg, a little below the knee. This pain became so severe that a neighboring physician, a homœopath, was sent for. He had the patient go to bed and administered various internal remedies. At about 9 P.M. the pain became easier, when suddenly all the symptoms of the classical apoplectic seizure developed. In this state he was removed to his home, where Dr. E. saw him about 11 P.M. Venesection, the application of croton oil to his tongue, and the internal use of tartar emetic caused him to regain consciousness; but when Dr. E. saw him the next morning his temperature was 102° and the fatal issue seemed imminent. Later in the day the hæmorrhage recurred and he died the same night.

October 11, 1886, a man of fifty-three consulted Dr. E. about a severe pain in his back. The closest examination failed to reveal its cause. It was not lumbago, for no movement of any kind augmented or diminished the pain. After several days of fruitless

medication a blister cured it. The man then remained well for three months, when the same pain suddenly returned while he was at his home on the night of January 16th. Nothing seemed to give relief, and a little after 5 A. M. death occurred from cerebral hæmorrhage.—*Med. News*, March 28, 1891.

SURGERY.

STRICTURE OF THE MALE URETHRA.

Dr. J. William White, in the *University Medical Magazine*, gives his views in an able manner as to the treatment of this condition. The following are his conclusions:

1. Strictures of large calibre, that is, of more than 15 French, situated at or behind the bulbo-membranous urethra, are to be treated almost without exception, by gradual dilatation.

2. Strictures of large calibre occupying the pendulous urethra are to be treated by gradual dilatation when very recent and soft, and by internal urethrotomy when of longer standing, distinctly fibrous in character or non-dilatable. It is to be remembered that the great majority of so-called strictures of large calibre of the pendulous urethra are merely points of physiological narrowing.

3. Strictures of the meatus and of the neighborhood of the fossa navicularis should be divided upon the floor of the urethra whenever it is evident that they are real pathological conditions producing definite symptoms and not normal points of narrowing.

4. Strictures of small calibre (less than 15 French), situated in advance of the bulbo-membranous junction, unless seen very early and found to be unusually soft and dilatable, furnish the typical condition for internal urethrotomy, which should be done preferably with a dilating urethrotome and, invariably, with all possible antiseptic precautions.

5. Strictures of small calibre (less than 15 French), situated at, or deeper than, the bulbo-membranous junction, should be treated whenever possible by gradual dilatation. In a case of resilient, irritable or traumatic stricture in this region or of stricture which, for any reason (as the occurrence of rigors), is non-dilatable, external perineal urethrotomy is the operation of choice.

6. Strictures of the deep urethra, permeable only to filiform bougies, should be treated by gradual dilatation when possible, the filiform being left *in situ* for some time, and followed by the introduction of others, or used as a guide for a tunneled catheter. If the stricture be not suitable for dilatation, external perineal urethrotomy should be performed.

7. Impassable strictures of the deep urethra always require the performance of perineal section.

IS CANCER OF A POISONOUS NATURE?

Prof. Adamkiewicz, of Krakau, read a paper before the Royal Academy of Sciences at Vienna (*Deutsche Med. Zeit*). on the above subject. After formulating the following questions, he reaches the conclusions given below in reply thereto:—

1. Is it, in the first place, possible to demonstrate any poisonous property of cancer-tissue, no matter how developed, upon the animal organism?

2. Is the activity of the cancer-poison upon the animal dependent on the location of the site of inoculation?

Experiments upon rabbits have so far furnished the following answers:—

1. There is a poison in recently-removed and unchanged carcinomatous tissue.

2. This poison can kill animals in a few hours.

3. It acts only on the nervous system, and death is caused by paralysis of the brain.

4. Boiling heat and disinfectants (carbolic acid, etc.) destroy the activity of this cancer-poison.

5. The micro-organisms which are constantly to be found in cancerous substance and at the site of inoculation do not, however, seem to be the carriers of this cancer-poison.

6. By transplanting cancer-tissue upon a favorable soil, the latter also acquires poisonous properties; it cannot be stated definitely to what extent the micro-organisms are concerned in the production of these properties, which develop on this soil at the same time.

7. No other living tissue, whether of physiological or pathological origin, possesses (as far as can be determined from his experiments) the poisonous properties of cancer.

8. This poison has been found only in true carcinomas; in sarcomas and adenomas he has not yet been able to prove the existence of such a poison.

9. The action of the poison is so rapid that it may be of value as a means of rendering evident the cancerous nature of a pathological growth.

10. Tissue from the cadaver possesses a poisonous action very analogous to that of carcinomatous substance; this analogy is so great that it may be positively stated that malignant growths produce during life a material having an action similar to that of the poisons from the cadaver.

Adamkiewicz intends to produce the proofs of these conclusions in a more extended form. —*Memphis Med. Monthly.*

TREATMENT OF ABDOMINAL CONTUSIONS PRODUCED BY HORSE KICKS.

From an interesting study of the treatment of abdominal contusions produced by horse-kicks, Moty (*Arch. de med. et de Chirurg. nulit*, Feb'y and March, 1891) arrives at the following conclusions: 1. In one-third of the cases abdominal contusions of the origin indicated are accompanied by serious intestinal lesions. 2. The diagnosis of perforation is impossible. 3. The best method to use in the treatment of intestinal wounds is the direct union by means of sutures. Even if peritonitis exists, intestinal suturing and laparotomy can be practiced. 4. Meanwhile, an exploratory laparotomy is not indicated, and in the case of doubt, medical treatment alone should be resorted to. 5. In regard to prognosis, this should be withheld for about a month, for subsequent complications may arise as a result of a latent contusion of the mucous membrane.

TREATMENT OF GLEET AND SEXUAL NEURASTHENIA BY MEANS OF METALLIC BOUGIES.

Dr, Charles Szadek, of Kieff, Russia, in the *Atlanta Medical and Surgical Journal*, refers to the extraordinary difficulty of healing some cases of gleet is well known. There are men who have every morning an exudation, although they have tried every possible remedy against the evil. Frequently, especially after coitus or excess in saccho, the chronic disease becomes acute, which often leads to disagreeable results.

The product of the chronic inflammation of the urethra is an infiltration of the cells of the diseased mucous membrane; the infiltration gradually becomes fibrous tissue, which, in its turn, produces the cicitrization called stricture; the upper cells of this stratum, constantly sloughing, exfoliating and mingling with the mucous secretion of the glands, constitute the exudation which characterizes chronic gonorrhœa (gleet); the glands and lacunæ of the urethra are also affected. It is clear that many chronic gonorrhœas already represent the first stages of stricture, or, as Otis calls them "large sized strictures," which naturally cannot be cured by astringent solutions, or even such as are fatal to gonococci. If they are to be cured local pressure must be used to remove the cell infiltration, while medical treatment is adopted to affect the catarrh. For these reasons treatment with metallic bougies against chronic gonorrhœa has been mostly practiced.

In four years (1887–1890) I have treated fifty (50) cases of inveterate gleet with most satisfactory results, by the introduction into the urethra of Beniqué's duly curved tin bougies, anointed with either Unna's

Ol. cacao	1,0
Ceræ flavæ	2,0–5,0
Bals. Peruv	2,0
Arg. nit	1,0

M.; f. ung.

Or Sperling's Salve:

Lanolini	20,0
Ceræ albae	4,0
Arg. nit	0,1–0,3

M.; f. ung.

These bougies are slightly conical and eleven centimeters in length. In nervous or very sensitive subjects, in whom the assertion of the bougies gives rise to pain and erection, from 3 to 5 per cent. solution of cocaine should be previously injected into the urethra; during the first sitting the bougie is left *in situ* not longer than for three or five minutes, but later on the duration of the sittting is gradually increased up to fifteen or twenty minutes. The sittings are repeated every two or three days, except in very inveterate and atonic cases, in which a daily introduction of the instrument is advisable. I have used a set of the bougies from No. 18 to No. 30 charriere, commencing with the least irritating bougies and gradually ascending to even larger ones. In relatively recent and in old cases I have usually employed Nos. 22, 24 and 25, while in more severe and protracted ones (which, by the way, constitute a vast majority) I have passed, following Professor Otis's instance, by degrees to No. 28 or even No 30. In patients with narrowed ureter, I have enlarged the latter by means of a bistoury. In such cases where the lesions are situated in the bulbous or the posterior division of the urethra, his bougies should be introduced even as far backwards as the bladder; according to my experience, the deep insertion, when practiced with due caution and carefulness, never causes any untoward accessory effects (such as vesical or urethral irritation, urethral fever, etc.). The therapeutic results which I have obtained with this treatment are sat-

isfactory. My fifty cases of gleet, which were treated after the mechanical method in five cases of urethritis posterior, complicated with obstinate vesical affection, the results were far from being satisfactory; but in the remaining forty-five the treatment by metallic bougies proved highly successful. In thirty of the fifty cases a complete cure ensued; in another case a considerable improvement was obtained, and the only symptom left was a scanty mucoid discharge recurring from time to time. In relatively recent or in old cases from four to eight sittings proved to be sufficient for effecting cure. In a majority of cases, however, two or three months' course was necessary for the purpose, while in some unusually severe case, complicated with multiple strictures where a relapse took place, another course was to be repeated some months later.

The same method in the shape of the insertion of Nos. 20 to 30 gave to me most gratifying results, also, in fifteen cases of sexual asthenia, with spermatorrhœa and incomplete sexual impotence.

I arrive at the following general conclusions:

1. The method under consideration proves very useful; in many cases of neurasthenic irritation of the urethral mucous membrane, and in many cases of inveterate gleet, especially in those characterized by infiltration and other morbid changes in the mucous membrane and submucuous tissues.

2. It proves beneficial further in inveterate gleet of an atonic character, or in that kept up by local nervous disturbances.

3. In some cases, however, the mechanical treatment must be supplemented by a subsequent course of local astringent remedies.

4. The method is free from any untoward accessory effects; provided, it is practiced with due precautions.

THE TREATMENT OF VARICOSE ULCERS.

Dr. J. Braun states that a large experience with this class of cases has convinced him of the superior advantages of a 10 per cent. ointment of zinc in lanoline (zinc oxid. 15.0, lanoline 110.0, ung. emoll. 40.0). This is applied as follows in cases of ulcer of the legs: The surface of the ulcer is thoroughly washed with luke-warm water, carefully dried with a compress, and the salve spread on a soft piece of linen applied to the sore and retained by a handkerchief or strip of linen. The patient remains in bed until the sores have cicatrized. The good effects of this treatment soon become apparent, the pains and itching disappear, and the profuse watery secretion is arrested, the greater part of the transuded fluid being absorbed by the lanolin which has hygroscopic properties. The ointment forms a protective covering under which healing takes place, while the lanolin by virtue of its antiseptic powers prevents decomposition of the secretions. In cases of unhealthy ulcers, the application should be renewed four or five times daily for the first few days. After three or four days, the surface of the sore will be found much cleaner, and cicatrization will have occurred at the margins, and then the ointment need only be applied three times daily. Once a day, and preferably in the morning, the ulcer should be irrigated with luke-warm water and dried, and before each application any remaining secretion is removed with absorbent cotton. Since employing this treatment the author has not found it necessary to resort to skin transplantation.—*Allg. Wien. Medizin. Central-Zeitg.*

GYNÆCOLOGY.

MEDICATED PENCILS FOR ENDOMETRITIS.

Terrier (L'Union Médicale, Jan'y 8, 1891) uses the following combination for the preparation of medicated pencils:

℞

Powdered iodoform	10 grammes.
Tragacanth gum	9.50 "
Glycerine and distilled water each	"
q. s. to make 10 pencils	

These pencils are recommended in the local treatment of simple endometritis, when direct exploration of the uterine cavity and dilatation are not necessary. The iodoform may be replaced by salol or resorcine in the same doses. If it is desired to use the bichloride of mercury, the pencils may be prepared in the following way:

℞

Bichloride of mercury	0.50 grammes.
Pulverized talc	25 "
Tragacanth gum	1.50 "
Glycerine and distilled water each	
q. s. to make 50 pencils.	

The vagina should at first be thoroughly washed and disinfected with a one thousandth solution of the bichloride of mercury, after which the pencils are to be introduced into the uterine cavity and retained there by the aid of iodoform or salol tampons.

TREATMENT OF FISSURED NIPPLE AND ENGORGED MAMMARY GLAND.

Dr. Barton Cooke Hirst, in a recent number of the *University Medical Magazine*, says: In the treatment of fissured nipple,

when the cracks are at all extensive, the ordinary remedies recommended from time to time have been found more or less unsatisfactory. Painting with tincture of benzoin, for instance, while an excellent procedure for small superficial cracks of the nipple. is perfectly worthless in more advanced cases.

The writer has found in hospital and private practice that excellent results can be secured in bad cases by the application of an ointment made up of equal parts of castor oil and subnitrate of bismuth. This mixture makes a very smooth, soft ointment, which relieves the pain, and is an excellent protective to the part. Before application, the nipple and surrounding skin should be carefully cleansed and disinfected, and then the ointment should be smeared on plentifully. If it is necessary for the child to nurse from the affected nipple, it can be allowed to do so without the necessity of removing the ointment from the nipple, as must be done if tannic acid or the salts of lead are used. This is a serious disadvantage of many forms of treatment recommended for fissured nipple, for the irritation of removing the substance employed as a local sedative neutralizes its action.

For the engorgement and pain in the mammary gland itself, which so often accompanies fissured nipple, the writer has had excellent results from the use of an application of lead water and laudanum, which is applied by means of a cloth covering the whole breast, renewed at frequent intervals, and kept in place by a suitable mammary binder, either that recommended by Richardson or the Murphy bandage. This not only retains the dressing, but supports the breast and exercises even pressure upon it. With this treatment the development of mammary abscess is a rare event. If the child can be nursed from the other breast alone, it is safer, I think, to draw the milk from the affected gland by means of a breast-pump, until the cure is almost complete. If it is necessary that the child should nurse from the cracked nipple, a glass nipple shield with a rubber tip must be employed.

TRENDELENBURG'S POSTURE IN LAPAROTOMIES.

The advantage of Trendelenburg's method of pelvic elevation in suprapubic operations upon the bladder has been generally recognized by surgeons. In a recent number of the *Centralblatt für Chirurgie*, Dr. Leopold states that an experience of several years has convinced him of the value of this posture in intra-abdominal operations on females, for diseases of the uterus, ovaries and tubes. By elevating the pelvis the intestines are caused to gravitate toward the diaphragm, and the pelvic organs are thus rendered much more accessible to operative procedures. As is well known the protrusion of the intestines into the wound is frequently a source of delay and danger in laparotomies; they get in the way of the operator, and are apt to be wounded. Aside from this. the posture affords an excellent view of the pelvic viscera, enabling us to recognize the presence of adhesions between the uterus and rectum or bladder; to diagnose the different forms of salpingitis and ovarian disease, and to determine the relative position of the organs. In operations before a class of students, the latter are enabled to follow the different steps of the procedure much more readily than when the woman is in the ordinary position. It is often a source of disappointment to those witnessing a laparotomy that many of the details of the operation escape observation, but Dr. Leopold assures us that by the employment of this posture, many important points in the technique, such as the manner of ligating the pedicle and the application of the sutures can be noted.—*International Journal Surgerg.*

HÆMOSTYPTICA.

Fritsch (*Therapeut. Monatshefte*, January, 1891) states that in common with all gynæcologists he uses ergot frequently in his gynæcological work. In obstetrical practice he rarely has occasion to employ it. For a long time he gave the drug in pill form as follows:

℞

Powder of ergot	80 grains.
Tragacanth	q. s.

Make 60 pills.
Take ten pills daily.

In practice among poor patients this is a desirable formula on account of its cheapness. For more prompt action he uses the following prescription:

℞

Powdered ergot	10 drachms.
Alcohol	20 drachms.
Sulphuric acid	2 drachms.
Warm water	4 pints.
Digest to	1 ½ pints.
Filter and add syrup of cinnamon	4 ounces.

Take two tablespoonsfuls three times daily.

This preparation of ergot, though very effective, will disagree with the stomach and cannot be taken continuously,

Fritsch then advises the use of Denzel's ergotine in the following combination.

℞ Ergotine (Denzel) } of each.....80 grains.
Powdered ergot }
Make 100 pills.
Take six pills daily.

In this way ergot may be given with excellent effect for a long while.

In cases of menorrhagia the following is advised:

℞ Dried extract of hydrastis canadensis }
Dried extract of gossypium } of each 80 grains.
Ergotine (Denzel) }
Make 100 pills.
Take three pills three times a day.

In the form of suppositories ergot seems to be of little value.

A tincture may be made on the plan of the decoction given above, of such strength that one drachm will contain eight grains of ergot. Of this two tablespoonfuls may be given daily. Fritsch calls this *tinctura hæmostyptica.*

This tincture is very effective, especially in menorrhagia after labor, at the climacteric and in profuse menstruation of the very young. This remedy should always be tried before any operative measures are undertaken for the relief of menorrhagia.—*University Med. Magazine.*

SEXUAL LIFE OF WOMEN AFTER CASTRATION.

At the Berlin Medical Congress, Dr. F. Deppler, of Venice, read a paper embodying the results of a study he had made in the cases of ovariotomy performed by himself. He had performed castration forty-six times, obtaining a cure in thirty-nine. These operations were performed for the relief of purulent or gonorrhœal salpingitis, oöphoritis, fibroid tumors of the uterus, etc. The following were his conclusions, derived from a study of the physiological consequences of these operations: 1. When the operation was performed on account of salpingitis or other inflammatory process, uterine hæmorrhage never occurred subsequently. 2. The conjugata became gradually shortened, and this was the more marked the younger the individual was when operated upon. 3. The uterus became atrophied, the vagina grew shorter and narrower, its mucous membrane became paler, and the labia majora were somewhat thinned. 4. The breasts grew smaller, acquiring a strong resemblance to the male mammæ. 5. The brown pigmentation of the nipple, areola, perineum, and annus disappeared wholly, as did also pathological pigmentation existing in some of the cases; the hair also turned white. 6. The tendency to embonpoint, which is generally believed to exist after these operations, was not observed by the author. 7. No changes were observed as regards the growth of the hair or the tone of the voice. 8. The sexual desire remained, and was the more pronounced the earlier in life the operation was performed. 9. The operation offers no impediment to marriage; three of the author's cases had married and had lived happily with their husbands for years. 10. A marriage with a castrated woman is the ideal Malthusian marriage, and the only way the Malthusian idea can be carried out without endangering the health and happiness of the woman. 11. In the cases operated upon in early life for inflammatory conditions, no neuroses were seen to develop, which was not the case when women were operated upon late in life for fibroid tumors of the uterus. 12. A favorable influence upon the hæmorrhage was observed after operation for myoma, yet in no case did the menopause at once set in. 13. In cases of operation for uterine fibroma, the patients, even those in full maturity, lost all sexual inclination after the operation.—*Medical Press and Circular.*

OBSTETRICS.

INDICATIONS FOR OPERATION IN ECTOPIC GESTATION.

Dr. C. A. L. Reed, of Cincinnati, Ohio, contributed a paper to the *Southern Surg. and Gyn. Assoc.*, on this subject.

The paper starts with the assumption that the only proper treatment of ectopic gestation is by laparotomy, or, more properly, cœliotomy. While the profession has become practically unanimous that this is the proper line of treatment, the indications for operation have been less definitely decided upon. This conviction is forced upon the observer, not only by a study of the literature of the subject, but by encountering cases which have been advised against operation by their attending physicians, until hæmorrhage within the pelvis has threatened a fatality, which is but too frequently realized. The most legitimate excuse for this dilatory practice is to be found in the confusion which has arisen with regard to the supposed uniform causal relationship of ruptured ectopic gestation to pelvic hæmatocele, and the division of the latter into "primary" and "secondary" rupture. These terms are unfortunate, and, as used in this connection, may be entirely arbitrary. Primary rupture is made to mean rupture beneath the peritoneum, instead of first rupture, as the etymology of the word would

imply, while secondary rupture is made to mean rupture within the peritoneum, instead of "second" rupture; whereas an intra-peritoneal rupture may be, and frequently is, a primary rupture, when spoken of with reference to the sequence of events in ectopic gestation. There would be no serious confusion here if we were not also taught to leave extra-peritoneal hæmatoceles alone, to be taken care of by absorption, and if we did not add that, as these hæmatoceles are generally caused by ruptured ectopic gestation sacs, we are to relegate these cases also to the expectant plan of treatment. This conclusion is without warrant, and is responsible for hundreds of deaths annually from this one cause.

The treatment of ectopic gestation premises the diagnosis of this condition. This is obviously difficult, and in the majority of instances cannot be arrived at at all, or, if at all, only presumptively. But in all these cases conditions can be found in the pelvis, which, if not conclusive of extra-uterine pregnancy, yet constitute conclusive indications for exploratory operation. The presumption of ectopic pregnancy can be arrived at before rupture, chiefly by a history of previous sterility, by a previous amenorrhœa, followed after a few weeks by irregular hæmorrhage, by increased tumefaction at each side, or behind the uterus, and by the existence of false decidua within the uterus. The latter fact may be safely determined by the judicious use of the Emmett curett forceps. The diagnosis after rupture is essentially the diagnosis of internal hæmorrhage. Time wasted either to determine the cause of that hæmorrhage, or to find out whether it be primary or secondary, is criminal. The thing to do is to cut down and operate. The position has been taken that time should be taken for the patient to rally from the shock. One of Dr. Reed's own cases died simply because he waited twelve hours for reaction—a lesson which taught him the fallacy of the old teaching, and which has since saved lives at his hands. The best way to overcome shock from internal hæmorrhage is to stimulate the patient by giving ether, stop the drain by ligating the bleeding vessels, and arouse the nervous system by washing out the belly with hot water.

What shall be done with the appendages on the other side? In view of the fact that tubal pregnancy generally depends upon desquamative salpingitis, as confirmed by the recent observations of Formad, before the American Association of Obstetricians and Gynæcologists, and in view of the fact that this disease is almost uniformly bilateral, the question is at once raised, "Is the woman liable to an ectopic pregnancy on the other side?" Herman, in the *British Medical Journal*, September 27, 1890, reports such a case; and Tait reports another, with death from rupture of the second conception. Leopold Meyer reports another, and refers to verified cases by Veit and Olshausen. There are now at least ten cases on record. From this Dr. Reed concludes that if the patient's condition at the time of the operation is such as to justify further interference, the appendages from both sides should be removed.

He submitted the following conclusions:

(1.) The only proper treatment of ectopic gestation is that by abdominal section.

(2.) The operation should be done in cases before rupture as soon as the condition can be presumptively diagnosed.

(3.) The operation should be done in cases after rupture, as soon as the evidences of internal hæmorrhage become apparent.

(4.) In cases in which the period of viability has already been reached without rupture, pregnancy should be allowed to advance to term before operation, but only under the closest possible vigilance.

(5.) In all cases the appendages from both sides should be removed, providing the condition of the patient will justify the extension of the operation.—*Ann. Gyn. Pæd.*

THE TREATMENT OF ECLAMPSIA.

Dr. Barton Cooke Hirst (*Ann. Gyn. Pæd.*) in considering the various methods employed in the treatment of eclampsia, says that he believes that a careful analysis of the different plans of treatment will award the palm to chloral, with diaphoresis and catharsis, anæsthetization and occasionally venesection. Morphia, it is true, gives the best record—3.3 per cent.—but this was in the hands of a single individual, and his report would be more impressive were it more exact. Thus, he says that in "more than thirty years" he has had "more than sixty cases of eclampsia." In that period one's memory could easily play him false, both as to the number of cases and the results. Chloral, on the other hand, has achieved brilliant results in different hands and places. He should like to see veratrum viride more extensively tried, and would be glad to unite with others holding hospital positions to give it a thorough test under favorable conditions. He believes the results would be excellent—would, perhaps, challenge those of chloral. But as the case

stands at present, it seems to me that the conscientious physician must depend upon chloral, at least in private practice, until the equality or superiority of some other plan of treatment is proved. Perhaps a combination of chloral and veratrum, one by the bowel, the other hypodermically, will give better results than either remedy alone. This he intends to test at the first opportunity.

PÆDIATRICS.

INSOMNIA IN INFANTS.

Dr. Jules Simon considers insomnia a symptom of much importance in infants. In many diseases it is a sympton of minor importance, and of no special interest. In others it is one of the chief manifestations of the disease. The influence of dentition has been greatly exaggerated. Unless congestion of the gums or surrounding parts is present, it causes but little disturbance of the sleep. Dyspepsia and indigestion are the most common and universal causes of disturbed sleep, even without the definite symptoms of vomiting; diarrhœa, or marked constipation. A discussion of the treatment would involve a review of the whole subject of dietetics. Causes referable to the nervous system probably occur next in frequency. All young infants may, even in the first year, present evidences of acute cerebral congestion. Extremes of either cold or heat may produce the same result. A child that has been exposed to a strong wind during its daily airing, or one that has had insufficient protection from the sun, may pass a restless and uncomfortable night. This condition must be distinguished from the insomnia of meningitis which, in some cases, is for many days the only sign. In older children, headache due to overtaxing of the brain is not uncommon. Anæmia and rapid growth, in conjunction with over-study, is a fruitful cause of insomnia. In children of rheumatic parents this tendency is especially marked. Among nervous causes in these older children, hysteria, chorea, and epilepsy are the most common. The young hysterical subject is always liable to insomnia, with or without headache. Some attribute all headaches of this period to hysteria, but the author believes that the distinction should be carefully made between such headaches and those due simply to rapid growth and over-study. The insomnia of epilepsy is peculiar to itself, and is sometimes the only symptom for a considerable period. The child suddenly wakes from profound sleep, sits up, and begins to cry, but soon lies back, as if exhausted, and falls into a deep sleep. These attacks are always accompanied by incontinence of urine. Insomnia complicating chorea is an exceedingly grave symptom. Earache is always accompanied by insomnia, and usually by continuous crying. Hernia is a cause of pain and sleeplessness that is frequently overlooked. Intermittent fever is in some cases marked by wakefulness at a definitely recurring period. Insomnia and headache are prominent and early symptoms of albuminuria.—*New York Medical Journal.*

DIAGNOSIS OF TUBERCULOSIS IN CHILDREN.

In the March No. of the *Rev. Mens. des Malad. de l'Enfance*, M. Mirinescu calls attention to the existence of enlarged lymphatic glands in various parts of the body, such as the axilla, groins and others, as affording great assistance in making the diagnosis of phthisis in children, especially in doubtful cases. If the child is in an emaciated and weakened condition, and there are no superficial lesions to explain the enlargement of the glands, it may be inferred that tuberculosis is present. Out of sixteen cases of this nature examined, the glands of fifteen were found, by experimental inoculations, to be tuberculous. This "peripheral polyadenitis" as the author terms, it, may be observed in children as young as fourteen or fifteen months.

THE ANTIPYRETIC TREATMENT OF FEBRILE AFFECTIONS OF CHILDREN.

In the yearly report of the Children's Hospital of Berne, Professor Demme publishes a number of rules as to the selection of antipyretic measures in the treatment of various febrile affections in children, and his results, which are exceptionally valuable, in that he has rich experience, are published in the *Wiener Medizinische Blätter* for January 1, 1891.

In the first place, Dr. Demme maintains that he is firmly convinced that, in children, febrile affections, with moderate fever, from 100° to 101° F., are best treated without any antipyretics whatever in the way of therapeutics, and that the febrile symptoms may be best controlled by cloths wet in cold water and wrapped around the trunk. His experience, he states, has taught him that such moderate febrile temperatures, with the accompanying nervous excitement and restlessness and the insomnia, or still more alarming profound somnolence, can be more

satisfactorily overcome by baths of from five to ten minutes' duration each, administered twice daily, the temperature of the water being from 79° to 82½° F. When, however, the temperature reaches 104°, and remains at this elevation, then antipyretics are necessary, although the author shows that there is the greatest choice in the selection of a suitable remedy for this purpose. Regard must not only be paid to the elevation of temperature alone, but also the character of the morbid process and the condition of the patient's strength must come into consideration. His experience, he states, has taught him that typhoid fever, acute articular rheumatism, and broncho-pneumonia of asthenic type best respond to the antipyretic therapeutics. He rarely, however, employs them, or only exceptionally when compelled to, in diphtheria, in the acute exanthemata, such as scarlet fever and measles, and in simple croupous pneumonia. What was said above as to the employment of baths alone applies also to the combined employment of antipyretic drugs and baths. He only recommends the employment of baths when the temperature of the body is reduced during its administration in extremely rare cases and only when there is an alarmingly high temperature. In the large majority of cases, luke-warm baths, of the temperature above referred to, more or less prolonged in administration, will give much more satisfactory results. In cases where the soporific symptoms are especially marked, and where there is deep red or light cyanotic color in the face, luke-warm baths may be used and are better taken at about 40° F., poured over the head and neck. As regards the selection of the individual antipyretics, in addition to the general observations already given in every case of acute articular rheumatism, when the condition of the digestive organs permit it, he uses the salicylate of sodium, or, where there is a tendency to vomiting or diarrhœa or serious objection to the taste, he substitutes for it salol. Of the salicylate of sodium, the following are the doses to be administered in twenty-four hours: For children from 2 to 4 years of age, 7½ to 15 grains; for children from 5 to 10 years of age, 15 to 30 grains; for children from 11 to 15 years of age, 30 to 45 grains. The following are the doses recommended of salol: For children from 2 to 4 years of age, three times daily, a powder of 4 to 5 grains; for children from 5 to 10 years, three to four times daily, a powder of from 7½ to 12 grains; for children from 11 to 15 years of age, three to four times daily, a powder of 12 to 15 grains; and in typhoid fever he has found the greatest satisfaction upon the employment of thallin, administered in the form of sulphate, giving it every two hours to children from 3 to four years of age in doses of ¼ grain; from 5 to 10 years of age, in doses of ½ grain; 11 to 15 years of age, in doses of ½ to ¾ grain. In cases of broncho-pneumonia, where the temperature may often reach 106°, antipyrine is the remedy which Dr. Demme recommends, giving it dissolved in large quantities of water, with the addition of a little sugar and a few drops of brandy. In this mode of administration he claims that disturbances of the appetite or vomiting will be entirely avoided. He states that this remedy has rarely failed to give him satisfactory results where he has attempted to produce marked reduction of temperature, notwithstanding cases of broncho-pneumonia, or in the acute exanthemata, or even in malignant diphtheria, and he consequently prefers it to any one of the other antipyretics. He recommends the following doses, to be taken at hourly intervals: For children of from 2 to 4 years of age, 3 to 6 grains; from 5 to 10 years of age, 7 to 12 grains; 11 to 15 years of age, 13 to 15 grains. Of course, when the antipyretic effect commences, this dose must be diminished, while larger doses are, according to the author, never required. In cases of broncho-pneumonia in children, where hectic fever sets in, with high evening exacerbations and morning remissions, antipyrine, or any of the aromatic order of antipyretics, will be of value. The dose which he then administers is, for children from 11 to 15 years of age, 12 to 15 grains; although the author, as seen, gives the preference to antipyrine as an antipyretic, he nevertheless refers to acetanilide and antifebrin as likewise, in cases of erysipelas and acute rheumatism and pulmonary tuberculosis, satisfactory antipyretics, while antifebrin possesses the advantage over antipyrine in more seldom leading to the production of exanthematous eruption.—*Therap. Gaz.*

STATISTICS AND TREATMENT OF DIPHTHERIA.

Statistics as to the cases of diphtheria and croup treated in the Children's Hospital of Pesth are given by Dr. Johann Boksai (*Wien. med. Woch.*, No. 10, 1891) for the years 1889-90. There were 447 cases of diphtheria, and 32 of "primary laryngeal croup." Post-diphtheria palsy was noted in 10 per cent. of the cases. The mortality

among the 447 cases of diphtheria, of whom one quarter were under three years old, was 234 (54 per cent.); in 170 cases the larynx was not affected, and the death-rate in this class was only 23 per cent. Laryngeal croup occurred as a complication of faucial diphtheria in 237 cases; 53 cases recovered, 32 without, and 21 after, tracheotomy, which was performed 159 times. In the group of 32 cases of uncomplicated laryngeal croup, 16 cases recovered; 7 without, and 9 after, tracheotomy, which was performed 23 times. The treatment adopted in pharyngeal diphtheria was the internal administration of chlorate of potassium, gargling with lime water, and painting two or three times a day with a 5 per cent. solution of perchloride of iron in glycerine, which Bokai believes prevents the occurrence of laryngeal complications. After tracheotomy steam inhalations were continuously used, and perchloride of mercury internally. Sulphate of copper was used as an emetic, and was of great value in the early stages of laryngeal croup, but the prolonged use of emetics was dangerous. Tracheotomy was resorted to when suffocation was imminent; the operation, in Bokai's opinion is contra-indicated in septic cases, and in those in which the symptoms point to involvement of the bronchi. In the discussion which followed the reading of Bokai's paper at the Buda-Pesth Society, Professor Gerlóczy stated that 157 cases of diphtheria had been treated in the Rochus Hospital with a death-rate of 43.9 per cent. Dr. Glass spoke favorably of treatment by Lőri's method; this consists in burning about three-quarters of a pound of sulphur in a room, at the end of four hours ventilating the room four or five minutes, and then placing the patient in it; an adjoining room is then prepared for the patient in the same way.—*Brit. Med. Jour.*

INTUBATION OF THE LARYNX IN DIPHTHERIA.

Dr. J. Mount Bleyer, of New York (*Archives of Pediatrics*, March, 1891), gives the results of 512 cases of intubation of the larynx for croup and diphtheria operated on between 1886 and 1890; of these cases, 37 per cent. recovered. The 512 cases included 294 males and 228 females. The ages varied from 6 months to 21 years; 251 cases were under 3 years of age, with 73 recoveries; 260 were over 3 years of age, with 115 recoveries. Of 4 cases, 6 months of age, all died; of 7 cases, 9 months old, 4 died; of 3 cases, 10 months old, 2 died; of 14 cases, 12 months old, all died; of 48 cases, 2½ years old, all died. In cases of recovery the tube was removed on the first day in 5 cases; second day in 29 cases; third day in 37 cases; three days and a half in 14 cases, fourth day in 43 cases; fifth day in 22 cases; sixth day in 10 cases; seventh day in 13 cases; ninth day in 6 cases; tenth day in 4 cases; eleventh day in 3 cases; fifteenth day in 2 cases; twentieth day in 2 cases. Among the causes of death in the 322 fatal cases, extension of the false membranes occurred in 67 cases; bronchitis in 45 cases; pneumonia in 41 cases; broncho-pneumonia in 40 cases; sepsis in 39 cases; asphyxia, due to closure of the tube by membrane, in 2 cases. The author strongly emphasizes the necessity of making a forced or a normal laryngoscopic examination before operating, as the differentiation and diagnostication of other laryngeal diseases may be made out, and the extent of the diphtherial or croupous lesion seen. The tube is to be extracted daily for the purpose of removing any accumulation of loose membranes, tenacious mucus, pus, etc. "When the tube has been extracted, irrigate the posterior nares, pharynx, larynx, and entire surface with a mild solution of bicarbonate of sodium." Much of the success depends upon the judgment of the operator in selecting a suitable tube. When loose membranes exist in a case, a tube of thinner metal and larger calibre is recommended, and is left *in situ* for six hours or more. The tube once in place, the most vital portion of the treatment must be next carried out, namely irrigation of the affected parts. A No. 8 soft rubber catheter attached to a fountain-bag syringe, is passed into the nostrils alternately, and a solution of the peroxide of hydrogen (5 ounces of a 15 volume solution, chemically pure, in 12 ounces of water) is passed through; after this has been done, the next step is to wash out the mouth, pharynx and larynx. If necessary, a gag must be used; the patient is held well forward over a basin for the reception of the returning fluid. For purposes of comparison, the recorded results of tracheotomy operations are given as follows: German authors have obtained 31 per cent. recoveries in 5,795 cases; German hospitals record, 30 per cent. recoveries in 3,063 cases. French surgeons have tabulated 9,242 cases, with 24 per cent. cent. recoveries. In the Boston City Hospital between 1884 and 1887, 327 operations yielded 29 per cent. of recoveries. Out of 21,853 cases collected from all sources by Dr. Lovett, of Boston,

29½ per cent. of recoveries were obtained.—*Brit. Med. Jour.*

HYGIENE.

THE BACILLI OF MALARIA.

Dr. Andreas has recently published an interesting treatise on the comparative number of the bacilli of malaria in the air at different times of the day. His experiments, which were conducted in the Observatory of Moncalieri, and reported in the *Medicinische Neuigkeiten*, April 11, 1891, were carried out by means of small rubber balloons filled with hydrogen. On to these balloons he fastened a small box, holding prepared glass slides, which box he was able to open by means of a cord, after the balloon had reached the desired height. Microscopical examination of the slides showed that in the early hours of the day the swarms of bacteria were close to the ground and in large numbers; later, at about nine o'clock in the morning until about three in the afternoon, they would rise until they reached a considerable height, and from that time would again gradually sink to the ground. The number of bacilli in the air was almost exactly in proportion to the rise of temperature, while in direct opposition to the amount of humidity in the atmosphere. It is evident, therefore, that the condensation of the watery vapors in the air cause the falling of the bacilli, and for this reason the morning and evening hours are the most dangerous in malarial districts.

INFECTION THROUGH THE SOIL.

The question is often raised whether there is any direct or indirect proof of the infectivity of the bodies of those dying from specific fevers, or whether the soil of graveyards may become really dangerously contaminated thereby; but it is also one to which comparatively little attention has been given by the experimentalist. One aspect of the matter has been lately studied by Dr. Justyn Karlinski, of Konjica, Herzegovina; in a series of experiments (*Centralblatt f. Bakteriol.*, ix, 13) undertaken to determine whether the organs of the body undergo any change in temperature during the natural process of decomposition after burial in the earth, and especially whether any differences in this regard are to be met with in the case of infected subjects. His results show that invariably the putrefactive process is accompanied by a rise of temperature above that of the circumjacent soil; and also that this rise in temperature is markedly higher when the parts examined have been taken from the bodies of men or animals who have succumbed to infective diseases than it is in the case of healthy bodies. He further examined into the question of the survival of the pathogenic bacteria in the affected parts, and states that the typhoid bacilli may retain their vitality in the decomposing spleen for three months, and are only completely annihilated by rapid putrefaction and the presence of a large number of the bacteria of putrefaction. Dr. Karlinski says that he had previously shown that typhoid bacilli could retain their vitality for a period of five months in soil, but that if the earth were thoroughly saturated with rain water they were destroyed in from seven to fourteen days. The part played by the soil in the origin of epidemics should not, he thinks, be underestimated, since typhoid bacilli can only exist in water a comparatively short time.—*Lancet.*

INFECTION FROM MILK.

In the *Glasgow Medical Journal*, for October, appears an account of an epidemic of erysipelas and sore throat, occurring among families supplied with milk from a certain farm. The most striking symptom was an intense inflammation of the fauces, resembling erysipelas of the mucous membrane, with swelling of the glands of the neck, and in some cases suppuration. In some, true erysipelas of the skin developed. The temperatures ranged from 102° to 105° during the first few days of an attack. Convalescence was attended by extreme prostration. No bacterial examination was made, but a clear connection was traced between the milk and the epidemic.—(*Jour. Amr. Med. Asso.*)

THE ETIOLOGY OF TETANUS.

In the last number of the *Annales de l' Institut Pasteur*, there appears (from the Bacteriological Laboratory of Val-de-Grâce) a most interesting paper on tetanus by Drs. Vaillard and Vincent, which appears to throw very considerable light on the subject of tetanus, and to clear up a number of points and observations that have hitherto been enshrouded in obscurity. After describing the organism, and identifying it with that already made familiar through the papers of recent writers, the authors give it as their firm opinion that in cases of artificial inoculation of pure cultures it is always the poison introduced along with the bacillus, and not the organism itself, that acts upon the animal.

This indeed seems to be probable, as they are able to prove that almost inconceivably minute doses of this poison, which they compare with snake poison, are quite sufficient to produce all the symptoms of most acute tetanus; in fact, it was almost impossible, from some of the cultures that they obtained, to administer a dose that was not lethal.

An exceedingly interesting feature brought out in the course of their work is that in no case was the poison developed as soon as the organism began to grow; in fact, gelatine cultures of the tetanus bacillus were never capable of producing toxic symptoms until liquefaction of the gelatine had commenced, when spores were demonstrated to have been formed, and when the peculiarly disagreeable odor so characteristic of tetanus cultures had become perceptible. They associate both the odor and the peptonizing power with the formation of the poison in the cultures. That it was due merely to the presence of the spores that the material was poisonous they demonstrated by heating their cultures to a temperature of 62° C., for a short time (a temperature which is quite incapable of interfering with the vitality of the spores), when it was found that cultures so heated and introduced by inoculation into a rabbit or a guinea-pig failed to produce any tetanus, thus proving that although the spores are not killed the poison has been destroyed by the heat. The spores were proved to be living by making fresh cultures from them in artificial media; after a time they grew luxuriantly, and if left to grow eight or ten days produced another crop of the poison. By simply washing away the poison from the spores with distilled water they also obtained similar results, for, although the spores could still develop and form the specific poison in artificial media, they were, when inoculated, incapable of giving rise to any symptoms of tetanus. From the reaction to heat of a substance they were able to separate, and from its resemblance to the diastases in other respects, they conclude that they have obtained from tetanus cultures the true tetanus poison, a poison, however, that cannot be formed by the tetanus bacillus in healthy tissues. The microörganisms are here so rapidly attacked by the leucocytes that they are rendered *hors de combat* before they have time to form their poison.

It has long been well known that the tetanus bacillus could not develop in the tissues except, apparently, in the presence of other organisms, and the suggestion is offered that these other organisms act in one of two ways; they either paralyze the activity of the leucocytes, or they draw off, as it were, their attention and activity from the tetanus bacillus, thus allowing it sufficient time to develop its characteristic products. It is interesting to note that Drs. Vaillard and Vincent consider that in many respects the tetanus bacillus is extremely like the diphtheria bacillus, the method of action on and in the organism being essentially the same in the two cases, the above factors in all probability playing a part in diphtheria much as in the case of tetanus; and it is evident that in studying the one poison much light may be thrown on the other. Behring and Kitasato appreciated this fact, and combined their forces to work out the question of immunity in these two diseases. It is obvious, however, from a consideration of some of the points that are indicated in this paper, that there are many sources of fallacy that will have to be eliminated before the ultimate explanation of the condition of immunity in protected animals can be given. The facts that this poison is active in such extraordinary minute quantities, and that the microörganisms are able to grow with such difficulty in the human tissues, allow us to hope that extremely minute changes in the blood may be quite sufficient to secure the alteration or breaking-down of the virulent poison, even when it has become diffused throughout the system. So long as the organism is localized to the wound, there is, of course, more chance of coping successfully with the disease, although here, as in other diseases, there always appears to be a possibility of the poison exerting such a paralyzing influence on the cells that usually take up foreign substances, that secondary septic conditions may be liable to occur even when the action of the tetanic poison can be antagonized so far as its primary effects on the cells are concerned. One question appears to be set at rest, and that is, as regards tetanus and diphtheria, the ptomaines have had their day, whatever may become of the products of other organisms. It may be accepted that here, at any rate, we have some subtle poison which, although it has not yet been actually separated, has become so far isolated that it may be taken as proved that it is not an alkaloid or basic poison. A most remarkable feature is that, in peptonizing gelatine with the filtrate from a meat-broth culture of the tetanus bacillus, the poisonous properties are lost to a certain degree in direct proportion to the amount of gelatine that is peptonized; this, taken in conjunction with the fact that the properties are not developed until the gelatine begins

to liquefy, has led Drs. Vaillard and Vincent to suppose that the same agent that peptonizes the gelatine is the active agent in bringing about the development of the toxic symptoms of tetanus.—*The Lancet.*

THE REPUTED CAUSE OF INFLUENZA.

Dr. Tezzier, of Lyons, France, claims that influenza is produced by a microbe, which he styles the strepto bacillus, whose habitat is putrid mud. That Russia is its home is, in his opinion, due to the fact that bad drainage, filthy streets and neglected barnyards are the rule, a condition particularly aggravated by swollen rivers and generally wide plains.

BACILLI IN SYPHILIS.

Dr. von Marschalko, who has been working in the pathological laboratory of the Buda-Pesth University at the subject of the bacteriology of syphilis, has devised a method of staining by which bacilli may be found in syphilitic growths of various kinds, such as papules on the skin, the indurated base of a chancre, and condylomata, as well as in the secretion of primary sores, while he has not been able to find them in non-syphilitic growths or in the secretion of soft chancres. Whether they are really inseparably connected with syphilis can, of course, only be decided by a prolonged series of observations, but there would at least appear to have been a *prima-facie* case made out for further investigation. The method employed is by double staining, as follows:—The object, after having been hardened in alcohol, is immersed for thirty-six hours in an alkaline solution of methyl blue; it is then rinsed well with water, and re-stained by a concentrated solution of vesuvin in water. The bacilli are stained blue, and can be easily distinguished from the tissues, which are brown.

HINTS ON DISINFECTION.

Dr. von Esmarch has innumerated some of the points that should be specially attended to in the use of disinfecting apparatus. He agrees with most authorities that steam, either circulating or under pressure, and without the admixture of air, is by far the best means of disinfecting clothing and other articles that will withstand the action of moist heat. As to whether circulating steam or steam under pressure is best, he thinks that it is entirely a matter of convenience, but it will be readily understood that where large chambers have to be constructed it would be difficult and extremely expensive to build them of sufficient strength to withstand any great pressure from within. Even in the case of smaller sterilizing chambers, the expense of obtaining them sufficiently strong is so great that in most cases their use is precluded. The main desiderata for a perfect disinfecting apparatus are that it shall be close to the source of the steam-supply; that there shall be sufficient steam developed to fill it thoroughly, and to keep up the temperature for some length of time; that the steam shall be sent in at the top and passed out at the bottom, in order that every crevice of the apparatus may be filled; and that where it is used in large establishments, it shall be placed between two rooms, into one of which articles to be treated are to be taken, and passed in at one door of the sterilizer; while the other room should be at the other end of the sterilizer, and into it the clothes should be passed, so that they shall not again be brought into contact with unsterilized clothing, etc. Articles that are to be disinfected should not be allowed to remain too long in contact with steam, and before being steamed they should be thoroughly heated, so that there is no opportunity for the steam to condense on cold surfaces, and in the same way they should be well dried by heat after the steaming process has been concluded. Twenty minutes is quite long enough to allow most ordinary articles to remain exposed to a moist heat of 212° F., so that they should be left for this length of time after the temperature has once been raised to this point, this being determined by an electrical contact thermometer, or a thermometer placed in a tube through which the steam escapes; some simple manometer should be used to determine the pressure that has been obtained by super-heating the steam. The greatest attention should be paid to this point of time of exposure, for it is the experience of all medical officers of health that nothing deters people from sending their clothes to be sterilized so much as the fact that they are frequently ruined by too long an exposure to the action of the steam. Discrimination must also be used in determining what articles can be safely steamed, and an officer of health who ordered stamped plush, leather, skins, or waterproof material to be exposed to heat would render himself liable to be heartily laughed at by all practical men. Grease should always be removed if possible before the articles are put into the sterilizer, otherwise it becomes fluid and is liable to spread to other parts.—*Hygienische Rundschau.*

MEDICAL CHEMISTRY.

THE PHENYL-HYDRAZIN TEST FOR SUGAR.

Havilburg (*Centralbl. für klin. Medicin*, January 31, 1891), of Rio de Janeiro, proposes a modification of the Fischer-Jaksch test for the presence of sugar in the urine, which he considers more reliable. Two parts of phenyl-hydrazin hydrochlorate and three of sodium acetate are added to half a test-tube ful of water, to which a like quantity of urine to be tested is added. Instead of boiling over a water-bath the mixture is shaken with chloroform. In a little time the fluids separate. If sugar be present canary-yellow crystals appear in the upper layer. The reaction is more striking if the fluid is boiled and permitted to cool before the addition of chloroform. Havilburg suggests that the procedure might be adapted for use as a ready means of quantitative determination of the amount of sugar present.—*Amer. Jour. Med. Sci.*

THE PRACTICAL VALUE OF THE ALPHA-NAPHTHOL TEST FOR SUGAR.

Posner and Epenstein (*Berlin. klin. Wochenschrift*, Feb. 23, 1891), reviewing the details of this test, consider it to be free from many of the objections raised against other tests for sugar. It depends upon the fact that a solution of sugar, in the presence of pure concentrated sulphuric acid and a solution of alpha-naphthol, gives a violet-colored reaction, due, according to Udransky, to the separation of furfurol. This reaction occurs not only with sugars but with all carbohydrates and certain albuminoids; hence, the urine must be free from albumen. The test is extremely sensitive, showing one-hundredth of one per cent. of sugar. The reagents and glasses must be chemically clean. It was noted that normal urine, *i. e.*, urine which showed no presence of sugar by any of the accepted tests, gave with this test the reaction of such intensity as to indicate the presence of two-hundredth of one per cent. of sugar. The authors do not discuss the cause of this occurrence, deeming it sufficient to state that if the urine is diluted at least twenty times, this reaction is not obtained in normal urine. Hence, in practice the urine must always be previously diluted. The quantitive analysis for sugar by this method does not give perfectly accurate results in the decimal figures of the percentage. The authors conclude that the test is a valuable addition to practical medicine.—*Univ. Med. Mag.*

TEST FOR PURE ANTIPYRINE.

According to Dr. Gille, in the *Deutsche Medizinal Zeitung*, April 13, 1891, pure antipyrine may be tested by the following methods: (1.) The concentrated watery solution of antipyrine should have no effect either upon red or blue litmus paper. (2.) Pure antipyrine melts rapidly when exposed to heat, and gives off inflammable gasses, without leaving any unmeltable deposit or carbonated residue. (3.) One gramme of pure antipyrine should be entirely taken up by one gramme of water or alcohol. (4.) Sulphurretted hydrogen throws off no deposit in a watery solution of antipyrine.

A NEW POISON IN CHEESE.

Dr. V. C. Vaughn announces a new poison found in cheese. A number of samples of the suspected cheese, which, it was alleged, had caused nausea and vomiting, were examined at the hygienic laboratory, of Michigan University. Its poisonous character was proved in experiments on animals by its causing death in a few hours, but the nature of the poison could not be determined further than that it was not tyrotoxicon and that it belonged in the list of so-called poisonous albumens.

A NEW TEST FOR ALBUMEN AND OTHER PROTEIDS.

Dr. John A. MacWilliam gives in *The British Medical Journal* a method of testing for proteids by salicyl-sulphonic acid. Take a small amount of urine (for example, 20 minims), preferably in a very small test-tube, and add a drop or two of a *saturated* watery solution[1] of the reagent. If the urine is strongly alkaline, an extra drop or two of the acid should be added, and if no opalescence or precipitate occurs it is well to test the reaction with litmus paper, and make sure that the urine has been rendered strongly acid. On adding the reagent, shake the tube quickly so as to mix its contents. Then examine at once. The occurrence of an opalescence or cloudiness *immediately or within a very few seconds* (for example, 2 to 3 seconds), is a test for proteids intermediate in delicacy between the cold nitric acid test on the one hand, and the acetic acid and heat test (in favorable circumstances) on the other. The development of an opalescence some time after (for example, ½ to 2 minutes), is a more delicate test than even acetic acid and heat, and shows the presence of

[1] It is important to notice that the solution must be a saturated one in order to obtain the best results.

minute traces of proteid, which are probably insignificant from a clinical point of view as a rule.

Next heat the tube to the boiling point. If the precipitate or opalescence is caused by the ordinary "albumen" (albumen and globulin) commonly present in albuminous urine, it does not disappear on heating, but, on the other hand, becomes markedly flocculent. But if the precipitate or opalescence is due to the presence of albumoses or peptones, it clears up on heating (before the boiling point is reached) and reappears when the tube cools.

NEWS AND MISCELLANY.

OUTSIDE PHYSICIANS CAN ADMIT PATIENTS TO THE PHILA. POLYCLINIC HOSPITAL.

As evidence of the liberal spirit with which the Philadelphia Polyclinic Hospital is managed, it has been decided that the full privileges of the wards, private rooms and suite of operating-rooms may be extended by any member of the staff to physicians not connected with the institution.

Many physicians who are not attached to Hospitals have frequently cases that they would like to have under the auspices of a Hospital with its resident physicians, trained nurses and sanitary regime, and yet wish them under their own observation.

Patients thus admitted to this Hospital are attended by the physician for whom the case is admitted as fully as though he were a member of the staff. The admission blanks must invariably be signed by a member of the staff, who thereby assumes the responsibility for the acts of the physician, after which arrangements and terms may be made with the matron.

Visitors are cordially invited to visit and inspect the Hospital, on Lombard street, west of 18th, on Mondays from 3 to 4 P. M.

MUTTER COURSE OF LECTURES ON SURGICAL PATHOLOGY.

Prof. Roswell Park, of Buffalo will deliver the remaining four lectures of the Mütter Course, in the Hall of the College of Physicians, of Philadelphia, N. E. Cor. 13th and Locust Sts., on May 12, 13, 14, and 15, at 8.15 P.M.

Subject: Surgical Bacteriology. The medical profession are cordially invited to attend.

A SIMPLE METHOD OF REMOVING A NEEDLE.

I think it may be of service to record a simple means by which I obtained the removal of a broken needle from the heel of a young girl, aged 12, whom I saw lately walking about on her toes to avoid her right heel, into which a needle had been broken, touching the ground. The buried end could be felt, but any pressure led to its further entry. I directed her to wear a large thick corn-plaster around the spot, with a little wet cotton-wool in the center, and to tread freely on the heel. Within a week afterwards she showed me the needle, which had protruded, and she had easily withdrawn it. Thus no wound was made, and no scar left to be a tender spot on the plantar surface.—*Chas. Steele, M. D., F. R. C. S., in Brit. Med. Jour.*

ALCOHOL AND DIGESTION.

From experiments made on himself by Dr. Eichenberg some further knowledge of the effect of alcohol on digestion is obtained, which contrasts strongly with the teetotal lecturer's experiment showing how digestion in a glass vessel is retarded by alcohol. Dr. Eichenberg found that a small dose of strong alcohol—*e. g.*, brandy—shortens the time that food in general, whether animal or vegetable, or a mixture, remains in the stomach by more than half an hour. A similar but not quite so marked an effect is produced by a dose of diluted hydrochloric acid or mustard. Pepper and condurango diminish the time the food remains in the stomach by about a quarter of an hour. Beer and an infusion of rhubarb had no effect.

An enterprising lady has been making investigations upon the question of matrimony in regard to her sex. She finds that the highest marriage rate is among trained nurses, and impartial observation would rather tend to support the statement that this is the best field for matrimony which the fair sex enjoys.

A French dispensing chemist points out that a mixture of bromide of sodium and hydrochlorate of cocaine results in the alkaloid being precipitated. It will be well to bear this in mind, for, with the cocaine merely suspended, a serious and, in an infant, even a fatal accident might easily result.